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AUTHOR	Quinones, Juanita; Chang, Sung Wen
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ABSTRACT

This is one of a series of curriculum guides designed to assist bilingual teachers in efforts to provide a coordinated program of studies for students in the Connecticut Migratory Children's Program and for any other students whose native language is Spanish. It is felt that an effort should be made to discover the skill level at which a child is functioning, to choose materials from curriculum guides at that skill level, and to move to more difficult materials when the child is ready. Skills are suggested at given grade levels to provide a logical sequence of skill development. The overall focus of the curriculum guides in the series is on Puerto Rican history and culture. The present guide is for science instruction at the first grade level, and is divided into eight units: (1) Myself, (2) My School, (3) My Family, (4) My Home, (5) My Community, (6) Transportation, (7) Communication, and (8) Animals. Each unit is further divided into skills which combine the topic of the unit with basic scientific concepts that the child must master. Activities for each skill are suggested. A vocabulary list is provided in each unit, and the guide is illustrated with black-and-white drawings. (CLK)

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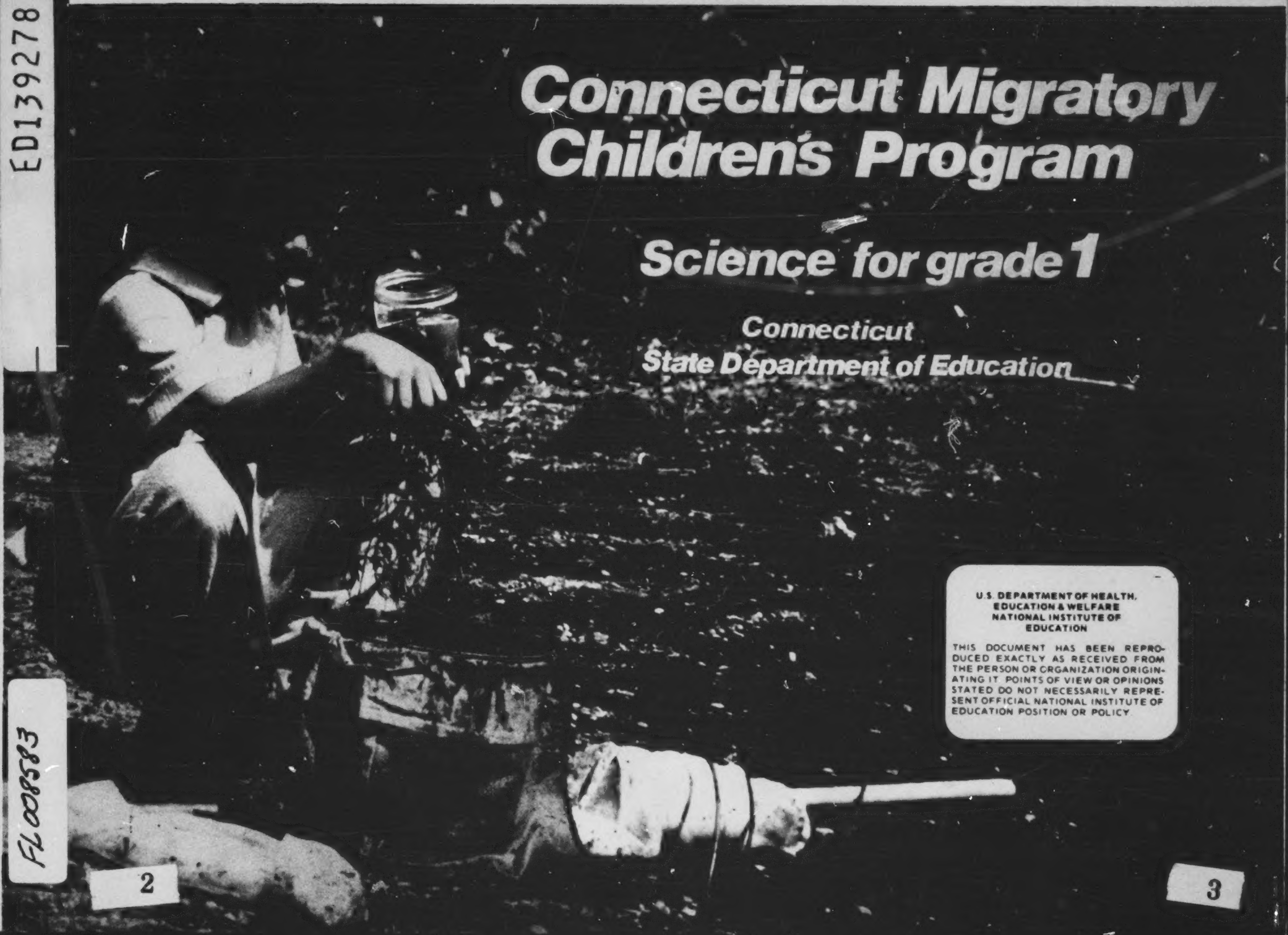

Connecticut Migratory Children's Program

Science for grade 1

Connecticut
State Department of Education

U.S. DEPARTMENT OF HEALTH,
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INTRODUCTION

Science Bilingual-Bicultural Curriculum For Grade One is one of a series of curriculum guides. When the series has been completed there will be guides for pre-school through grade five students in the areas of social studies, language arts, science and mathematics. The purpose of these guides is to assist bilingual teachers in their efforts to provide a coordinated program of studies for students in the Connecticut Migratory Children's Program and for any other students whose native language is Spanish. In utilizing this curriculum guide it is important to be aware of the philosophical and instructional principles which were central to their development.

First, although the guides contain skills which are commonly considered appropriate to specific grade levels and activities which will facilitate the development of these skills, it has never been assumed that there is a single norm of achievement for all children at a given grade level. There should always be an effort to discover the skill level at which a child is functioning, to choose materials from curriculum guides at that skill level, and to move on to more difficult materials only when the child is ready. This is especially true for students who have had their schooling interrupted and disrupted by a migratory experience. The purpose of suggesting skills at given grade levels is simply to provide a logical sequence of skill development. Teachers must be sensitive to differences between children.

Although all the skills introduced in this curriculum series are for the most part sequential, this aspect is particularly critical in the mathematics and science curricula. It is, therefore, important for the teacher to make certain that the students have mastered the already introduced scientific/mathematic skills before proceeding on to a new concept. Whenever appropriate, the activities within each skill move from the simple to the complex. The latter activities within each skill are often appropriate for use as evaluations by the teachers of a skill learned.

Second, the focus of the curriculum for pre-school and kindergarten children is on developmental concepts. In the guides for grades one through five the focus is on social studies concepts and other curriculum areas--language arts, science, mathematics--are related to the social studies content. The overall focus of the curriculum guides is on Puerto Rican history and culture. Placing the development of language arts, mathematics and science skills within the context of the experience and social identity of the child enhances motivation to learn.

Third, the instruction program should make every attempt not to confuse children through simultaneous use of two languages. Nevertheless, a major effort should be made to provide common reference points for instruction in Spanish and English. Instructional methodology should have the English learning program "keyed" to the teaching that takes place in Spanish. The concepts and vocabulary taught in English should, whenever possible, be closely related to concepts and vocabulary which have already been learned in Spanish. In this way, new materials which are being introduced in English will have solid conceptual structures with which to be associated--conceptual structures which have already been established in the learner's native language.

FORWARD

This curriculum guide has been prepared by the Hamden-New Haven Cooperative Education Center for the Connecticut Migratory Children's Program and the Connecticut State Department of Education. The preparation of this guide has been accomplished by a variety of people, including the following:

Curriculum Authors
  Mrs. Juanita Quiñones - Science Supervisor of Caguas, Department of Education, Puerto Rico
  Mrs. Sung Wen Chang - Independent Study Program, Hamden-New Haven Cooperative Education Center

Curriculum Artist
  Mr. Efrain Cotto - New Haven Migratory Children's Program

Curriculum Development Coordinator
  Dr. John Dixon - New Haven Migratory Children's Program

Policy Consultants
  Dr. Robert S. Avery, Director - Hamden-New Haven Cooperative Education Center
  Dr. Kenneth Lester - Connecticut State Department of Education
  Mr. Ramón García - Puerto Rico Migrant Program
  Mr. Reinaldo Matos - Connecticut State Department of Education
  Mrs. Laura Beauchamp - Department of Education of Puerto Rico

Curriculum Consultants
  Dr. Alexander J. Plante - Connecticut Staff Development Cooperative
  Ms. Rosa Quezada - Connecticut Staff Development Cooperative
  Ms. Deborah Zale - New Haven Migratory Children's Program
  Ms. Elizabeth Alegi - New Haven Migratory Children's Program
  Ms. Christine Bernardoni - Connecticut Staff Development Cooperative
  Mrs. Anne Keller - New Haven Migratory Children's Program
  Mr. David Butler - New Haven Migratory Children's Program

Copies of this guide can be secured from the Connecticut Migratory Children's Program, 800 Dixwell Avenue, New Haven, Connecticut, 06511 or the Hamden-New Haven Cooperative Education Center, 1450 Whitney Avenue, Hamden, Connecticut, 06517.

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The authors would like to extend their thanks to the following children for suggesting and trying out some of the activities:

Pang-Hua Kevin Chang
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Edwill Esquilin
Frances Esquilin

SCIENCE
BILINGUAL-BICULTURAL CURRICULUM FOR GRADE ONE

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UNIT 1: Myself

Skill A: To determine the size of an object in comparison to another.

Skill B: To determine the size of one's body in comparison to the bodies of other children.

Skill C: To infer the duration of an event by means of the observation of changes which have occurred.

Skill D: To arrange activities in sequential order.

Skill E: To compare the time of occurrence and the frequency of occurrence of different events.

Skill F: To compare the day and the week in terms of their duration.

Skill G: To identify and describe forces, such as: pulls and pushes.

Skill H: To identify characteristics of living things.

SKILL A: Is able to determine the size of an object in comparison to another.

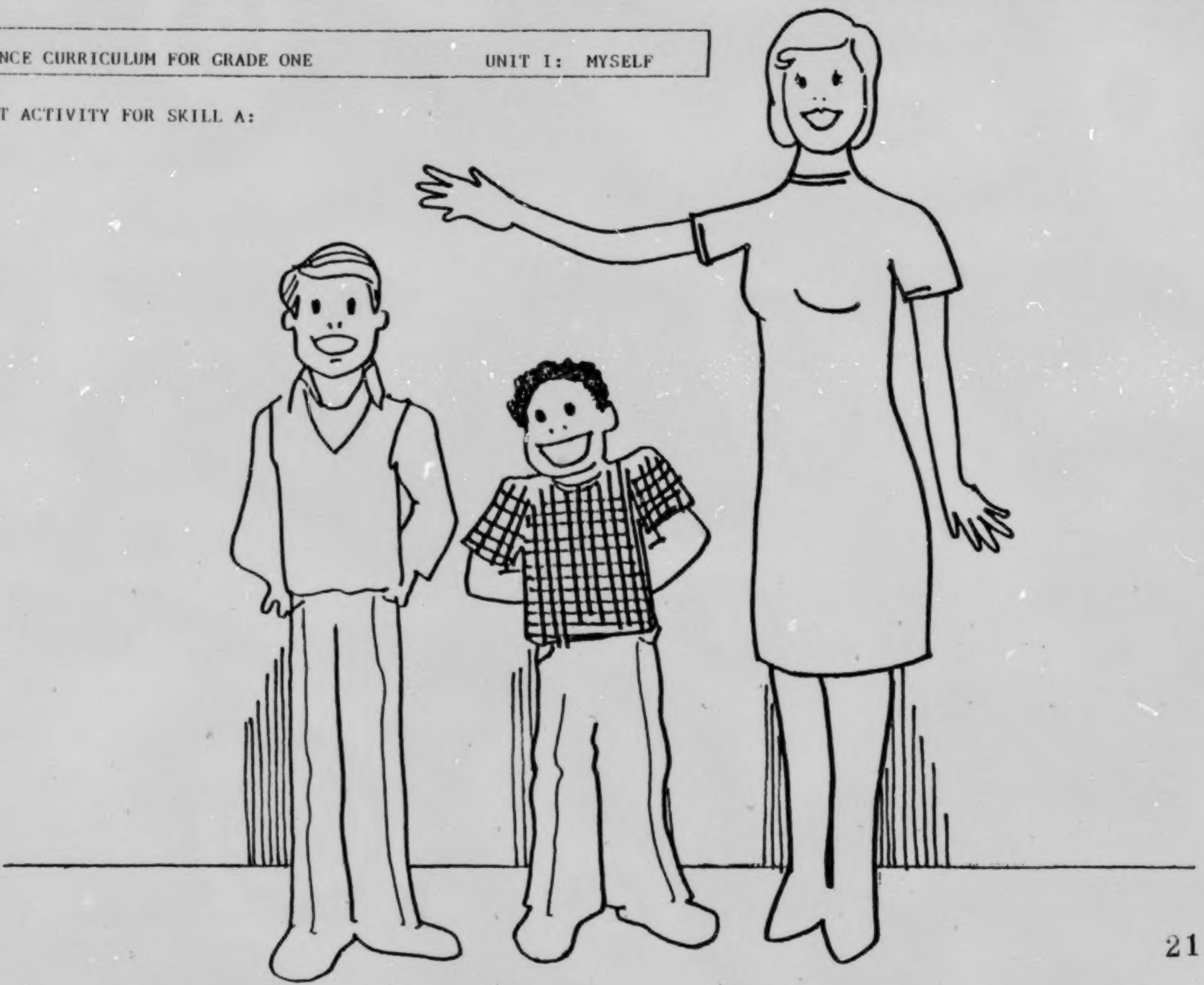
VOCABULARY:

tall, taller, tallest
high, higher, highest
short, shorter, shortest
low, lower, lowest
big, bigger, biggest
large, larger, largest
small, smaller, smallest

FIRST ACTIVITY FOR SKILL A

Ask the tallest child of the group to stand beside the shortest child. Ask: ¿Cuál es el más alto de los dos? Stand beside them and ask: ¿Quién es el más alto ahora? ¿Por qué anteriormente era (the child's name) el más alto y ahora no lo es?

FIRST ACTIVITY FOR SKILL A:



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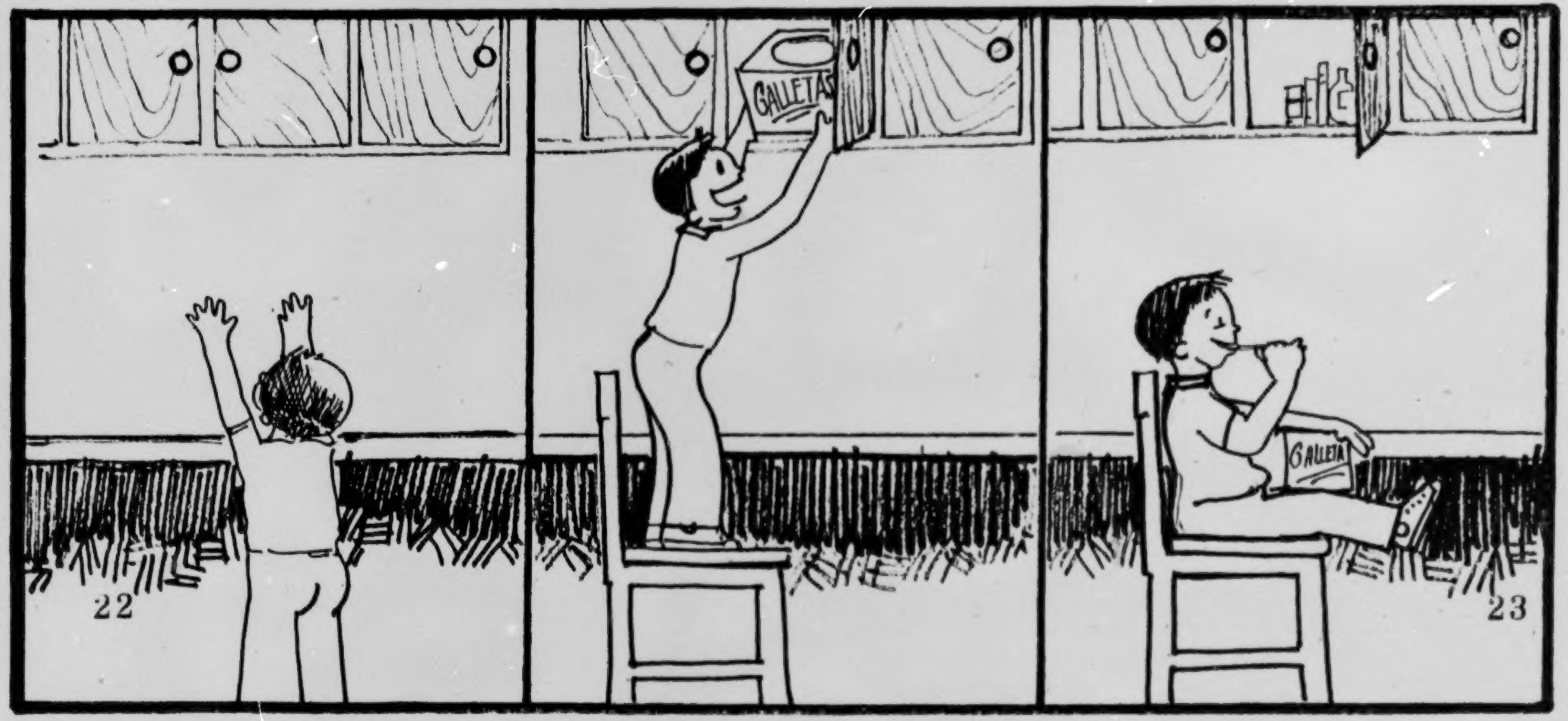
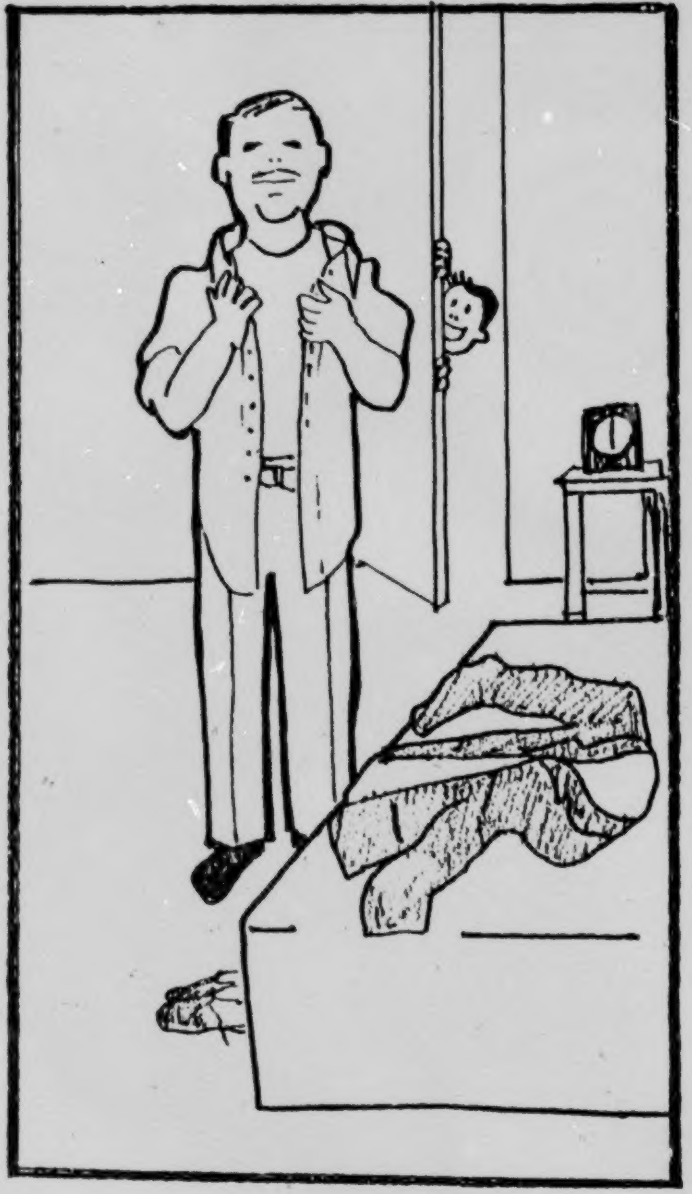
SECOND ACTIVITY FOR SKILL A

Invite a child to reach for an object that is very high (tall) for him unless he climbs up on a chair to reach it. Then ask the rest of the class: ¿Por qué no pudo (the child's name) alcanzar (the name of the object)? ¿Está muy alto? Now take the object yourself and ask: ¿Estaba (the object) muy alto o estaba muy alto para (the child's name)?





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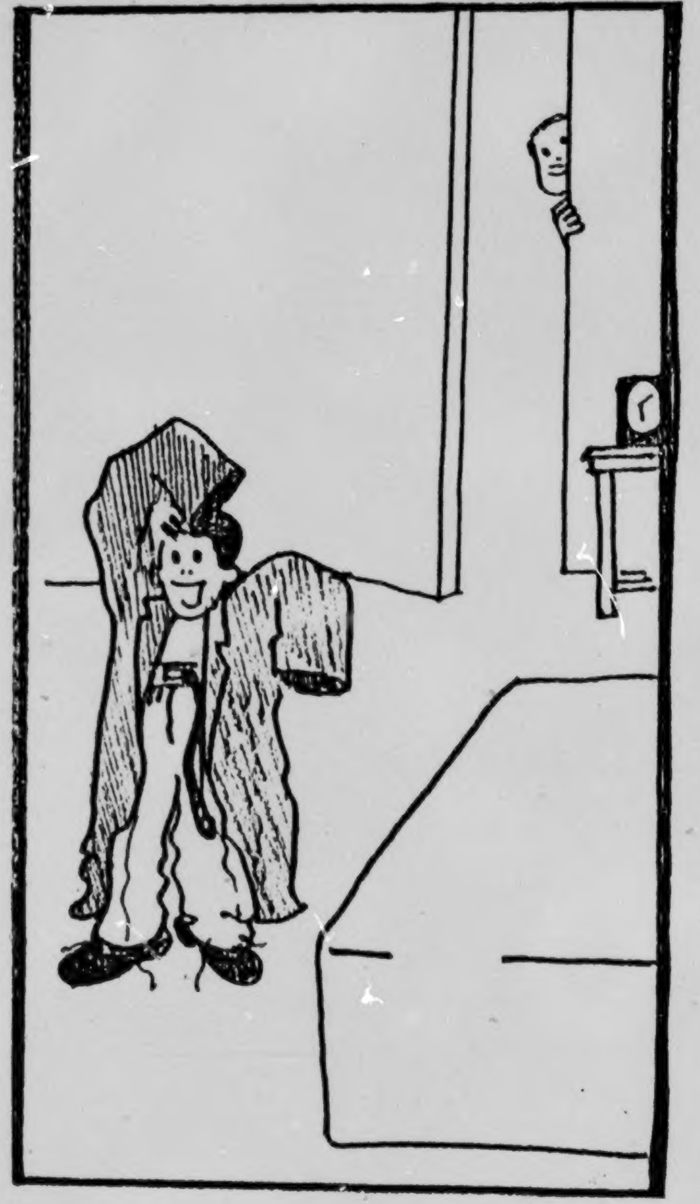

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THIRD ACTIVITY FOR SKILL A

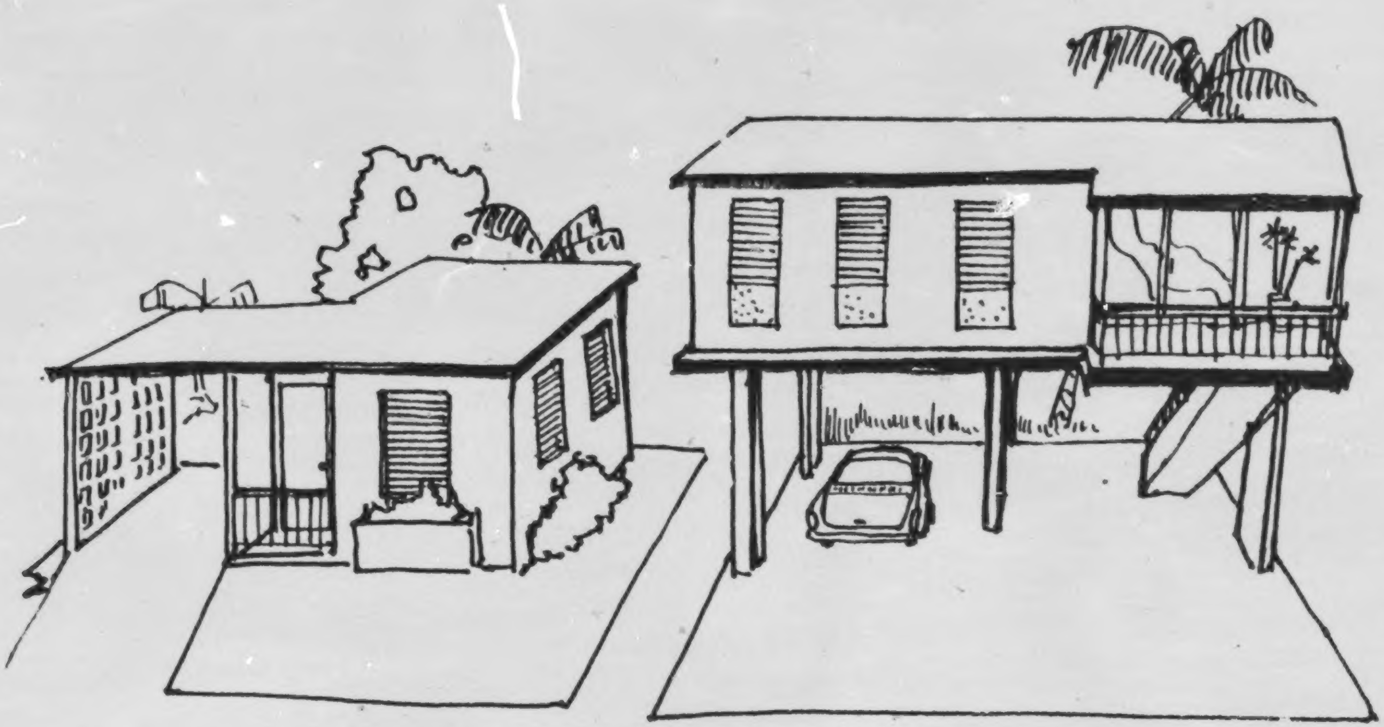
Tell a child to put on an article of clothing of yours, such as your coat or your belt. ¿Le sirve? ¿Es muy grande? Now, put on the coat or belt yourself and ask: ¿Es realmente muy grande o es que resulta muy grande para (the child's name)?

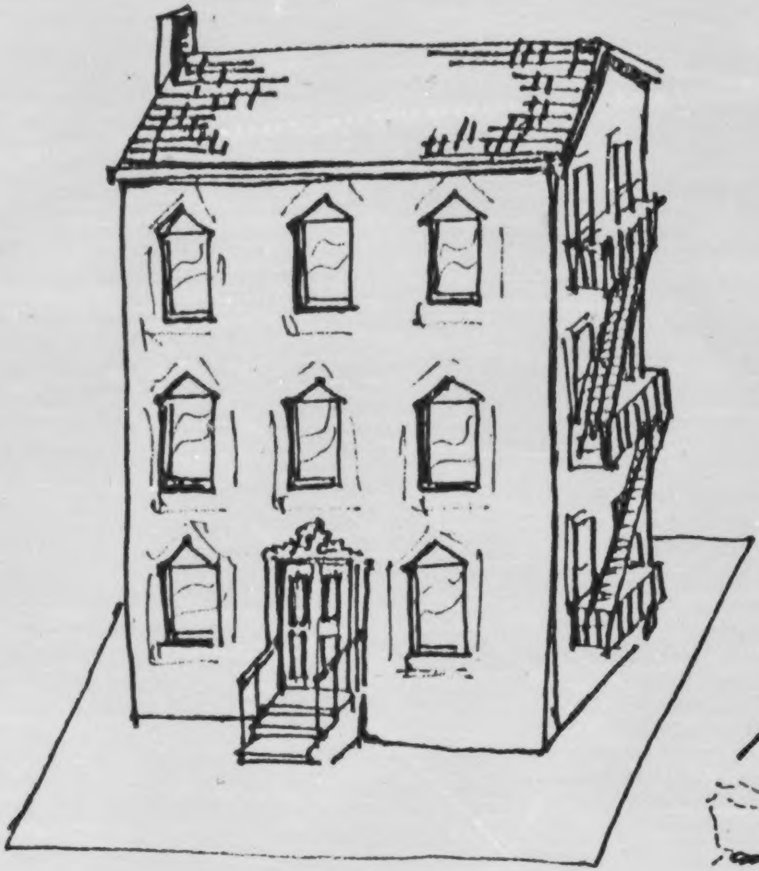
FOURTH ACTIVITY FOR SKILL A

Ask the children to think of things that make them feel big or small.

FIFTH ACTIVITY FOR SKILL A

Draw large and small houses. Ask the students to select the large ones.





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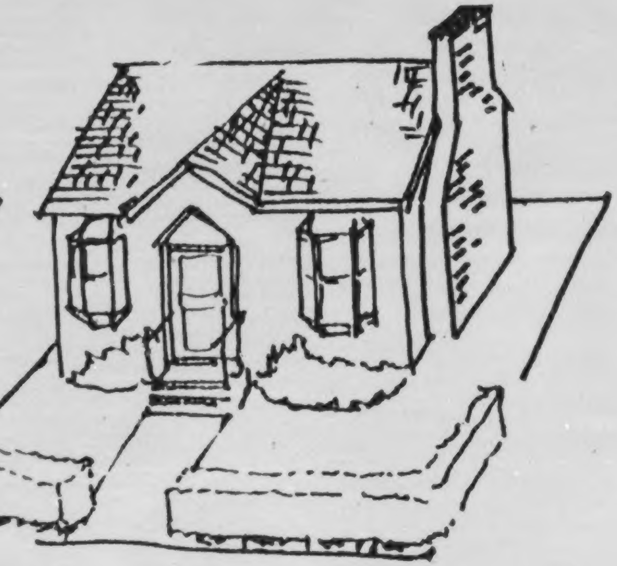

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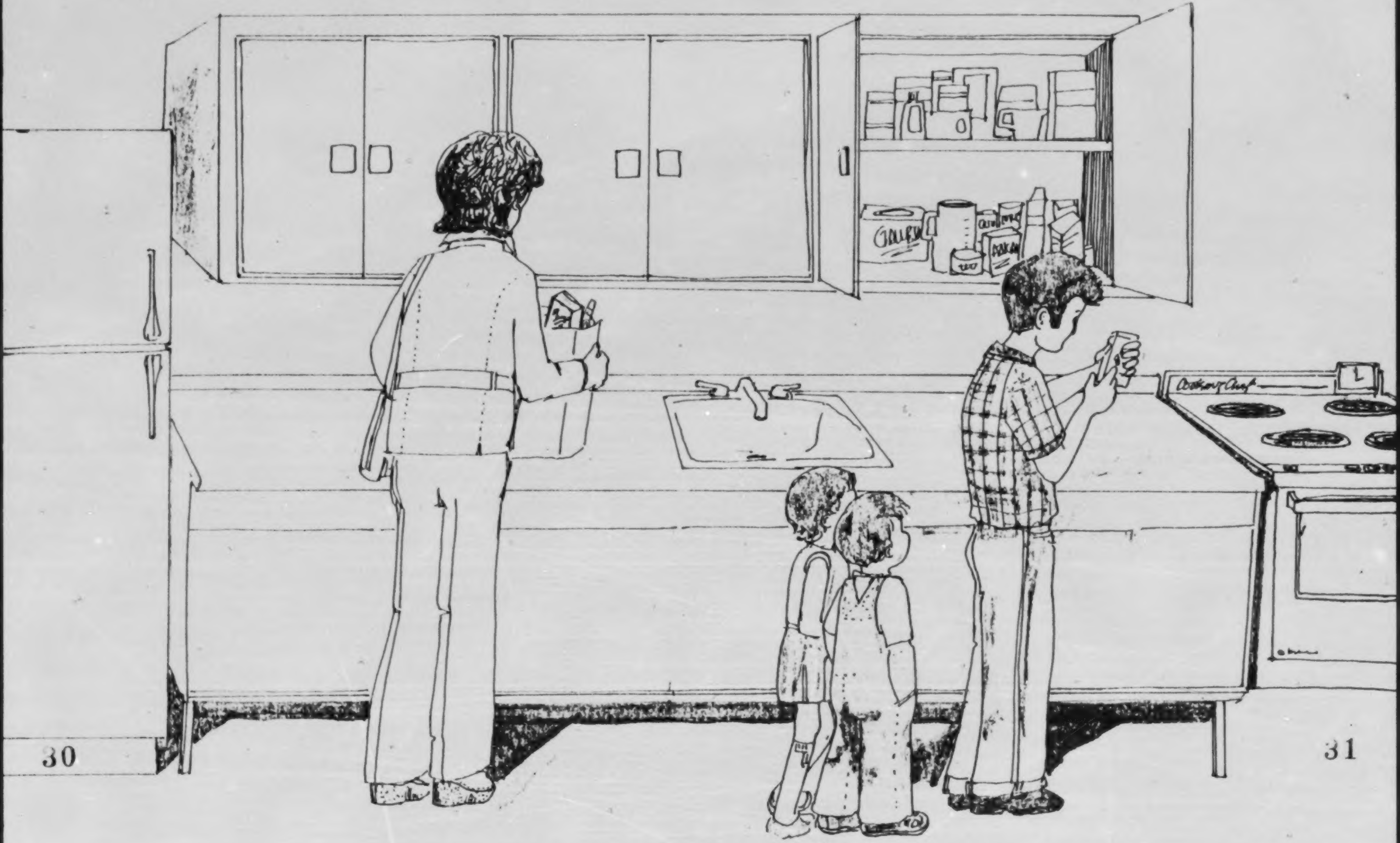
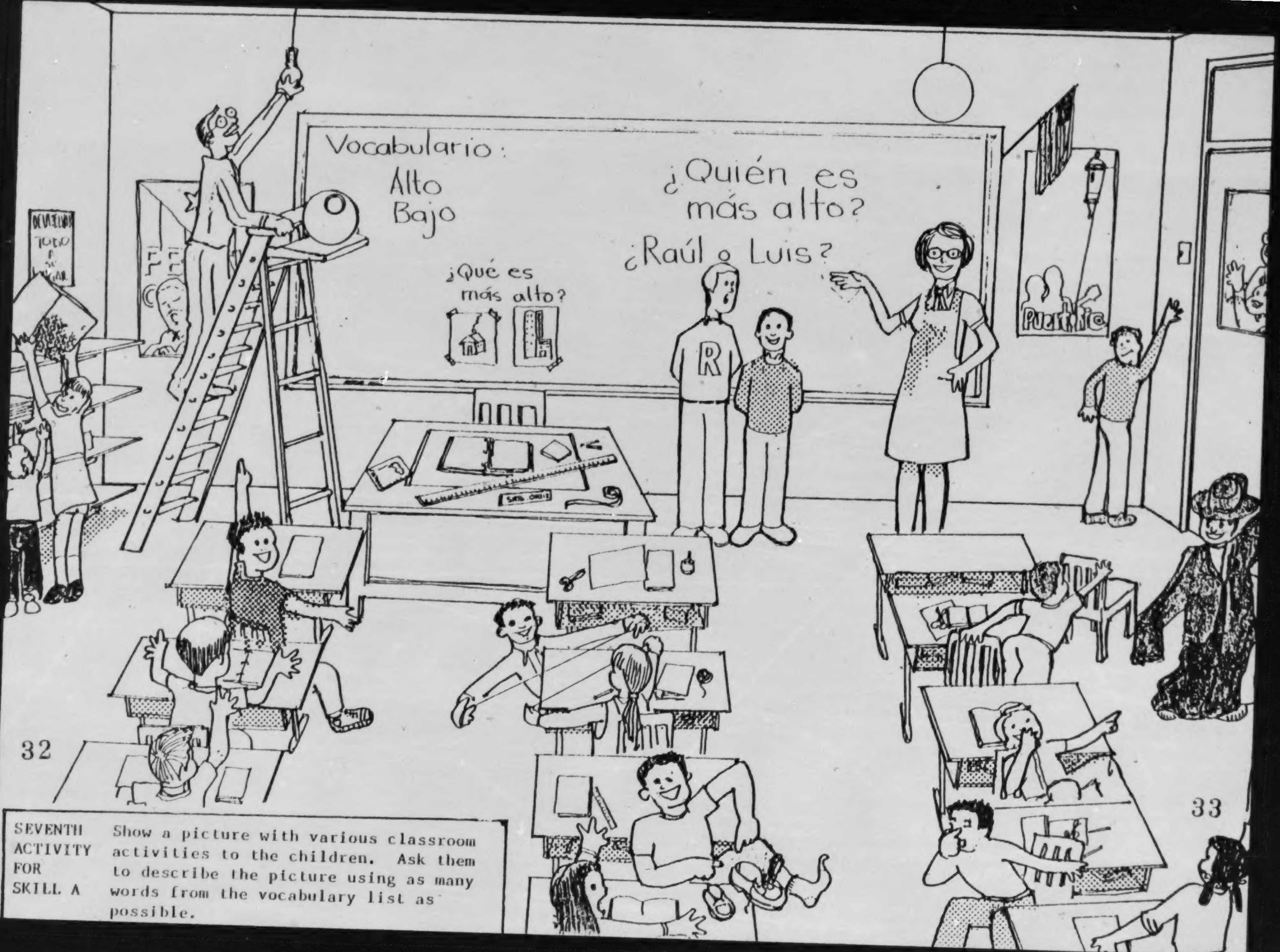


SIXTH
ACTIVITY
FOR
SKILL A

Draw children and adults looking in some cabinets. Have the children mark with an "X" the persons for whom the cabinets are too tall (high).


Vocabulario:
Alto
Bajo
¿Quién es más alto?
¿Raúl o Luis?
¿Qué es más alto?
R
Puerto Rico

SEVENTH ACTIVITY FOR SKILL A	Show a picture with various classroom activities to the children. Ask them to describe the picture using as many words from the vocabulary list as possible.

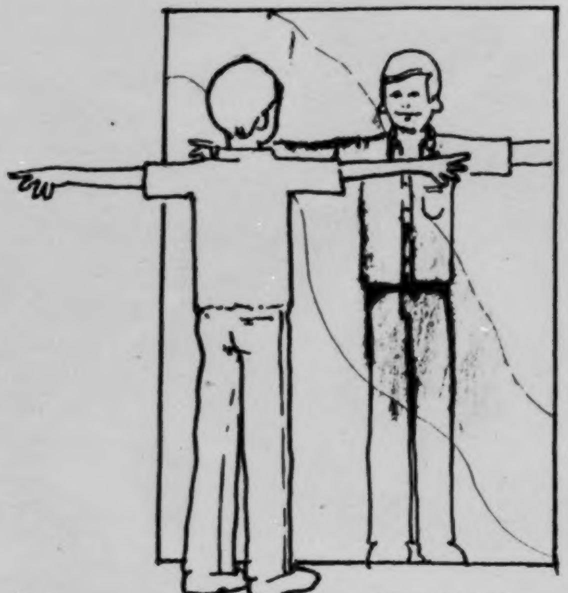
SKILL B: Is able to determine the size of one's body in comparison to the bodies of other children.

VOCABULARY:
tall, taller
short, shorter
height
wide, wider
width
measure, measurements

FIRST ACTIVITY FOR SKILL B

Ask the children if they have ever looked into a mirror while extending their arms to the sides. Have they noticed whether they are taller or wider? Inquire about what the children understand about tall and wide. How can they find out whether they are taller or wider? Let them try out the methods they suggest.

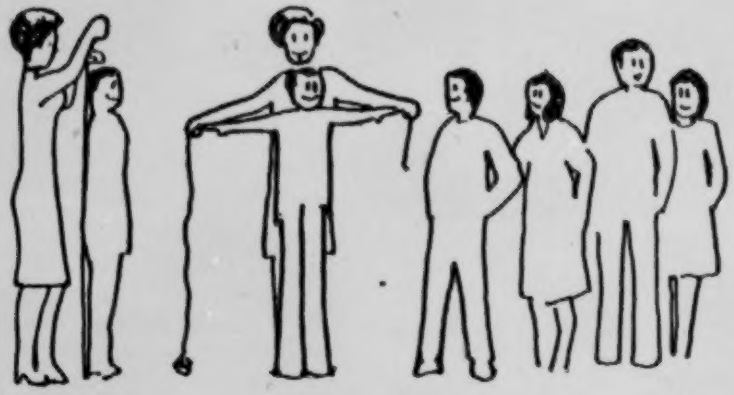
¿Eres más alto que ancho? Make certain again that the children understand that in this case "wide" means the distance from the tips of the fingers of one hand to the tips of the fingers of the other hand when we have our arms extended to the sides.

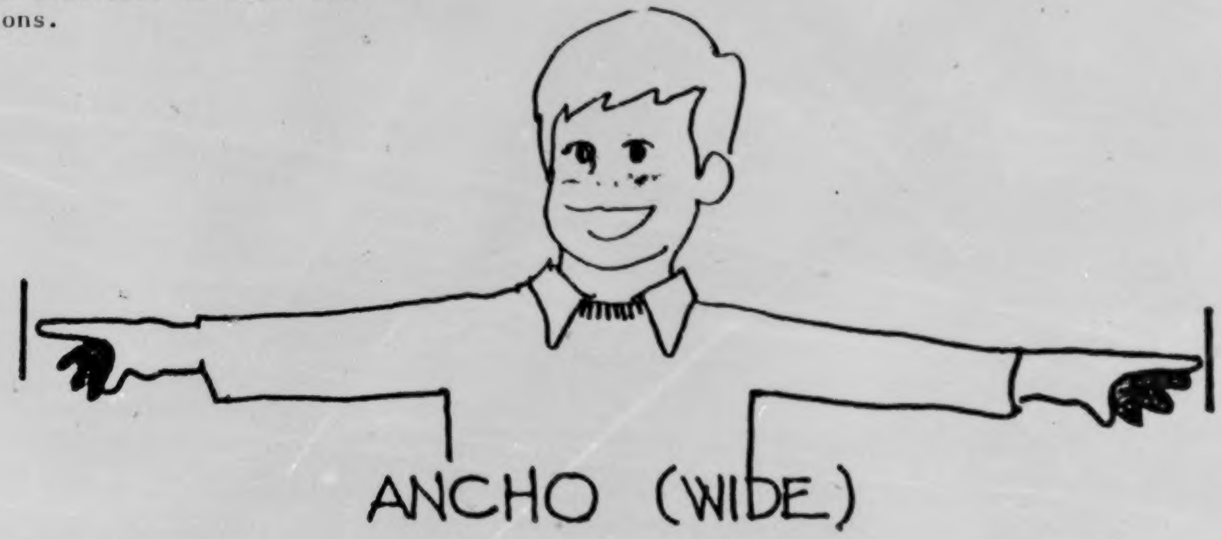


FIRST ACTIVITY

SECOND ACTIVITY FOR SKILL B:

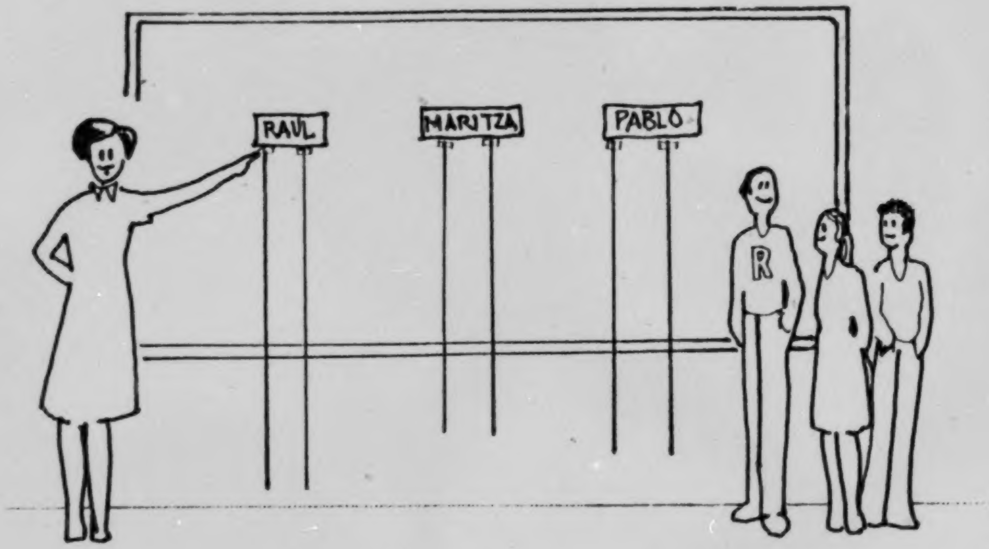
Organize the class into groups and distribute the materials necessary for them to measure height and width (scotch tape, scissors, string). During the process of measuring, the children may ask whether they have to take off their shoes, whether the curvature of the back is measured, or whether the hair is included. Encourage the children to seek solutions to their own questions.



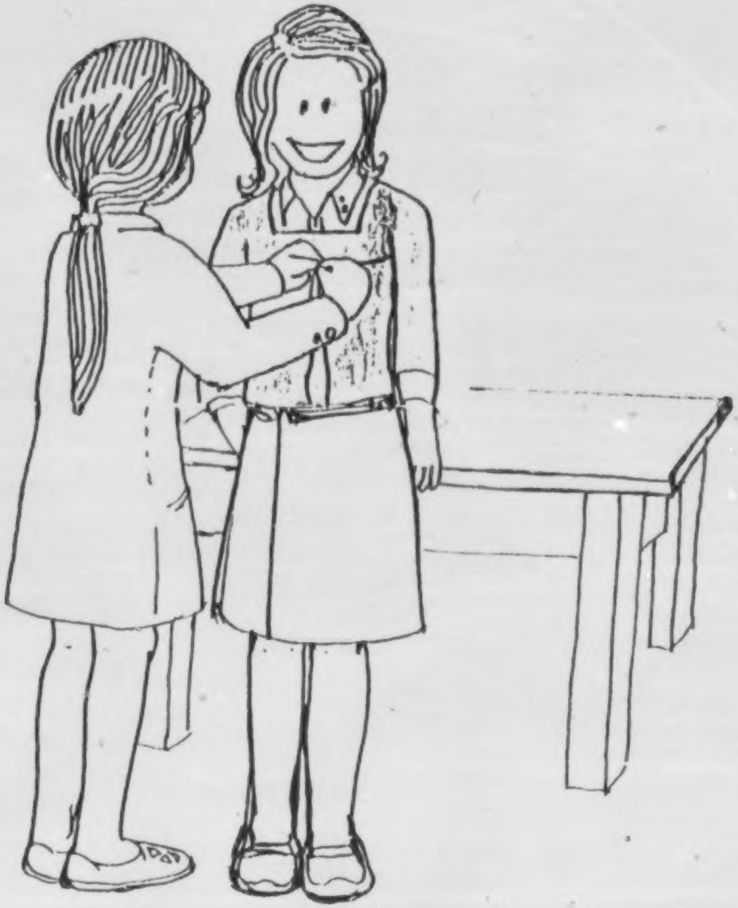


THIRD ACTIVITY FOR SKILL B

When the children have finished measuring their width and height, have them tape the two strings to the blackboard, one beside the other. Formulate questions which require the use of their knowledge of measurements to interpret the data. For example: ¿Qué distancia es más grande, tu ancho o tu alto? ¿Cuánto más grande? ¿Cómo compara tu estatura con la de tus compañeros? ¿Cuánto más alto es el niño más alto del salón comparado con el niño más bajo? This activity is intended to instill in the children knowledge of the methods for making quick comparisons between different lengths and different distances.



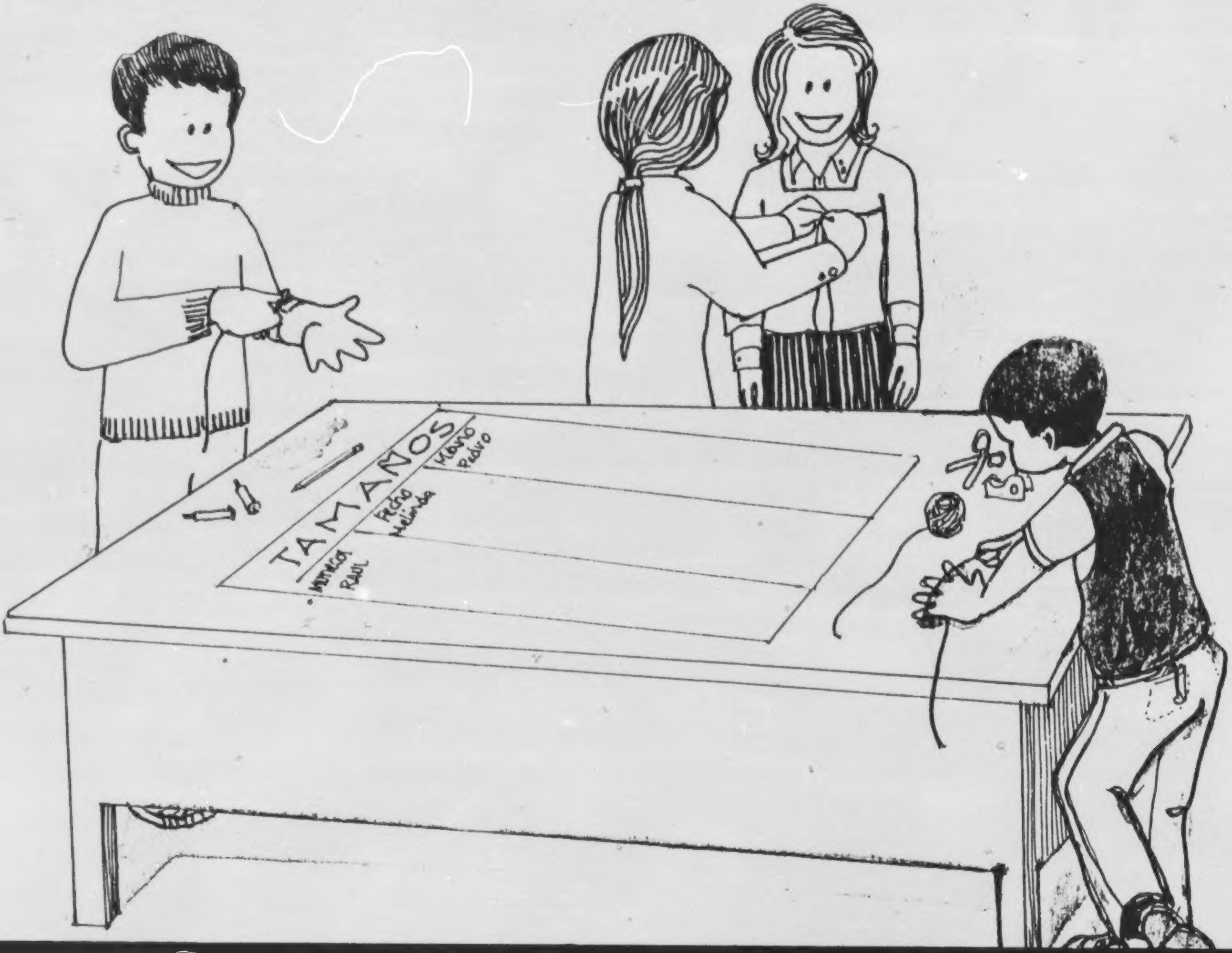
FOURTH ACTIVITY FOR SKILL B	Have the students form groups to take the measurement around their chests. Inform them that all chest measurements have to be done at the same level on the body. Demonstrate how it is done. When the children have completed the activity, write the children's names on pieces of masking tape and identify each measurement so that the children can stick them on the blackboard. Since these are chest measurements, they should be placed side by side in a horizontal position.



FIFTH ACTIVITY FOR SKILL B

Let the children work in pairs to take other measurements (with string):

a. their wrists
b. their ankles
c. their hands, etc.


TAMAÑOS
Monica
Raul
Pacho
Melinda
Mario
Pedro

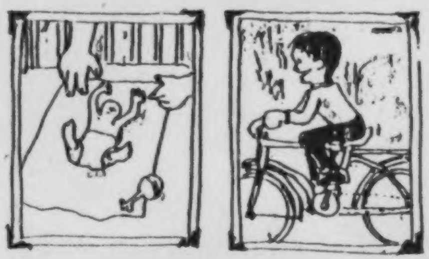
SKILL C: Is able to infer the duration of an event by means of the observation of changes which have occurred.

VOCABULARY:

event
change
time
age
evidence
order
sequence

FIRST ACTIVITY FOR SKILL C

Show two photographs of the same person, one taken when the person was small and the other taken some years later. (You may use pictures of one of the children of the group which have been solicited previously). Ask the children questions about how they have changed since they were little babies. Suggest that they bring evidence of these changes; photos, toys, things of personal use, clothing, etc. The photographs can be placed on a poster or a feltboard, arranged in age sequence.



DISPOS
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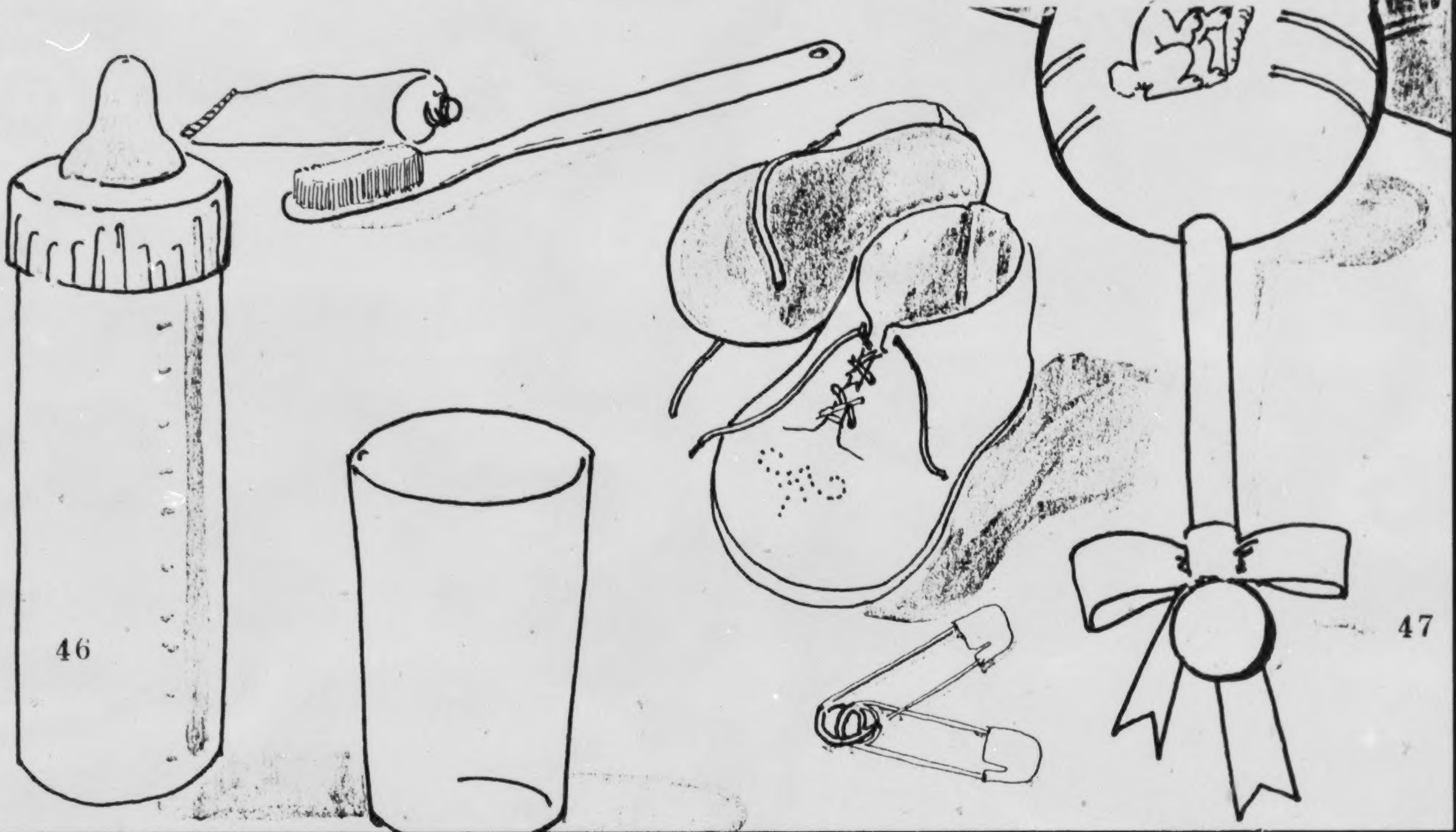
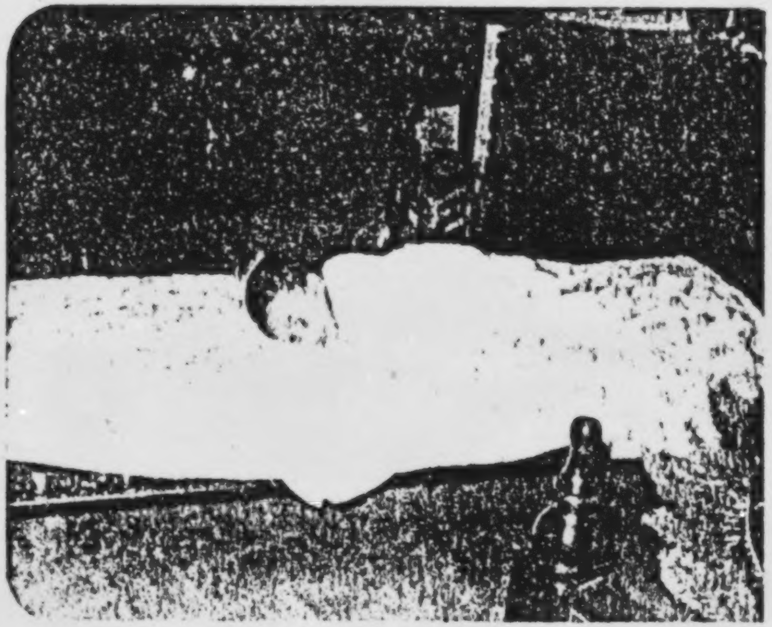
SECOND ACTIVITY FOR SKILL C

Ask the children how they have changed since they were babies. Show pictures of objects babies use (or real objects) and some objects that are still used by a child in first grade. For example: booties, a baby bottle, a toothbrush, a rattle, a cradle, a glass, etc. Which of these things do they no longer use? Bring out the fact that certain things such as toothbrushes and glasses are used for the rest of one's life, while cradles or rattles are used for only a short time.



THIRD ACTIVITY FOR SKILL C

Select two photographs of a child which give evidence of a difference in age. Show the pictures to the class and ask questions that will cause the children to think about how they can recognize differences in age. Ask, for example: ¿Es el mismo niño? (Sí) ¿Se ve igual en las dos fotografías? ¿Qué diferencia hay entre ellas? ¿Fueron tomadas el mismo día? ¿Pasó algún tiempo desde que se tomó una y otra? ¿Cómo lo sabemos? ¿Podemos decir que este niño cambió al pasar el tiempo?



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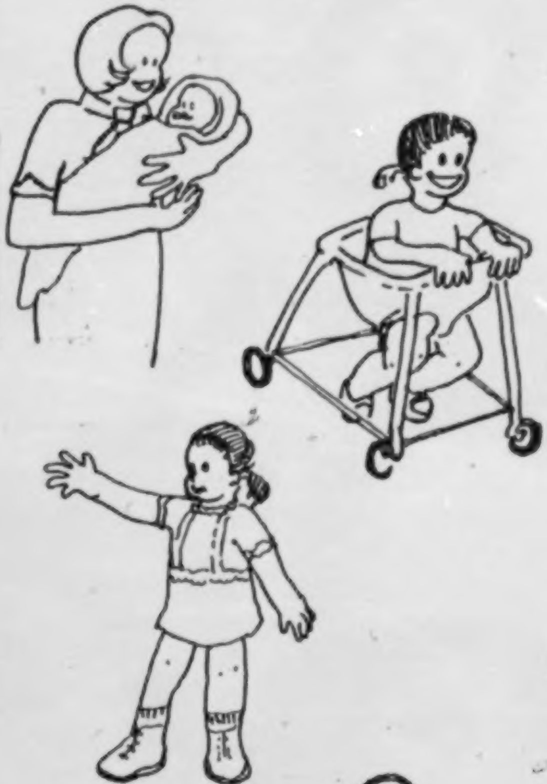
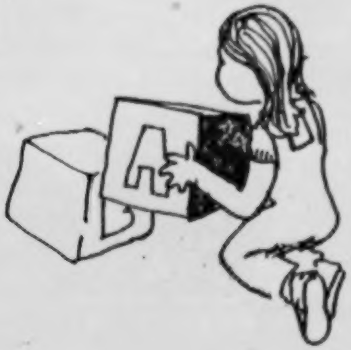
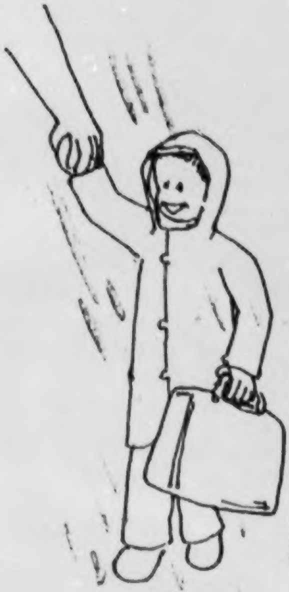
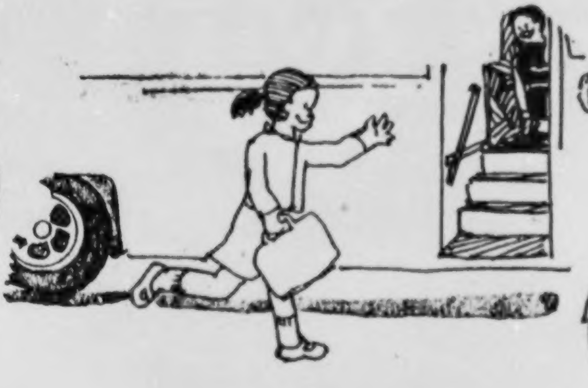
FOURTH
ACTIVITY
FOR
SKILL C

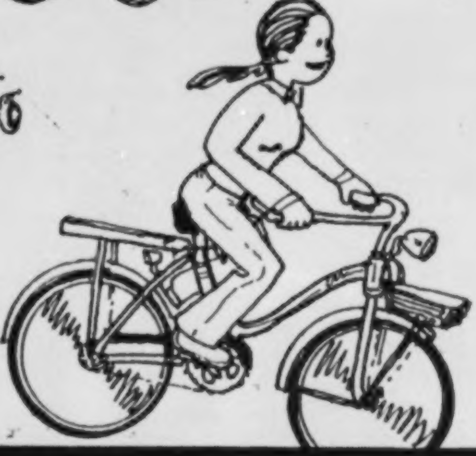
Draw a series of pictures of a girl (the same one) at different ages. Ask, for example: Si todas las ilustraciones representan la misma niña, ¿por qué hay diferencias entre ellas? ¿Qué edad tendrá la niña que aparece en la primera ilustración? ¿En la segunda? etc. ¿Qué detalles en la niña de cada ilustración te hace pensar que tiene esa edad?

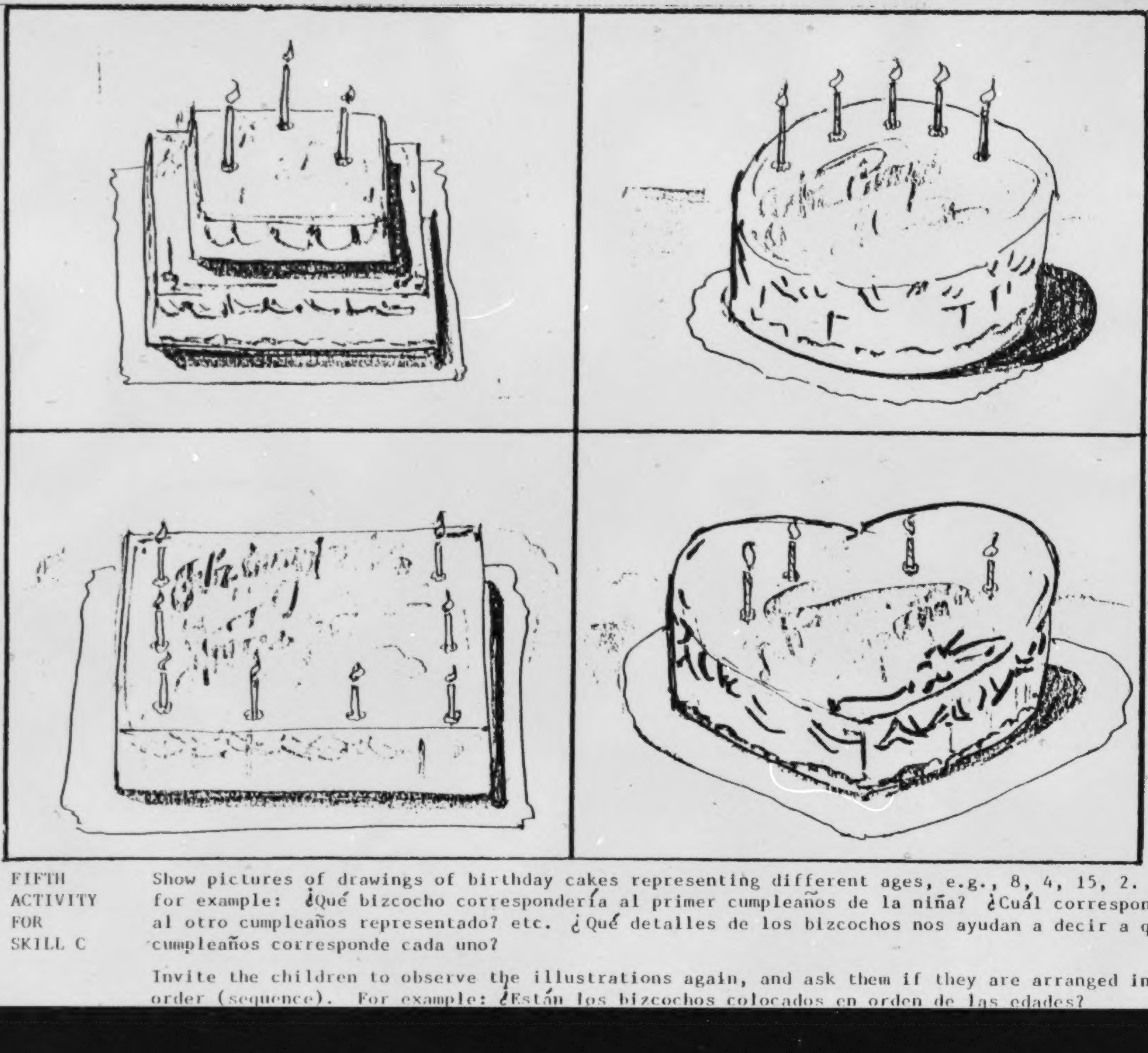












FIFTH ACTIVITY FOR SKILL C

Show pictures of drawings of birthday cakes representing different ages, e.g., 8, 4, 15, 2. Ask, for example: ¿Qué bizcocho correspondería al primer cumpleaños de la niña? ¿Cuál corresponderá al otro cumpleaños representado? etc. ¿Qué detalles de los bizcochos nos ayudan a decir a qué cumpleaños corresponde cada uno?

Invite the children to observe the illustrations again, and ask them if they are arranged in order (sequence). For example: ¿Están los bizcochos colocados en orden de las edades?

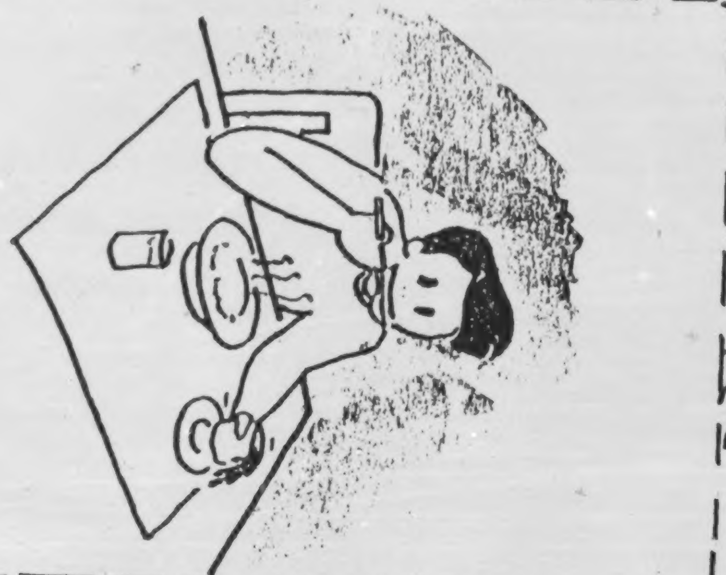
SKILL D:	Is able to arrange activities in sequential order.

VOCABULARY:
order
event
sequence

FIRST ACTIVITY FOR SKILL D Initiate a conversation with the children about the things which they did upon getting up and before coming to school, such as: brushing their teeth, eating breakfast, leaving for school. Ask questions which will cause the children to think about the order of these events. Ask: ¿Cuál de estas cosas hiciste primero? ¿Y después?

SECOND ACTIVITY FOR SKILL D

Show pictures of drawings which show children accomplishing certain activities, such as: getting out of bed, washing their faces, eating breakfast. Ask the children to observe them and to place them in the order in which they think the events logically occurred. Ask: ¿Cuál pondríamos primero? ¿Y después? etc.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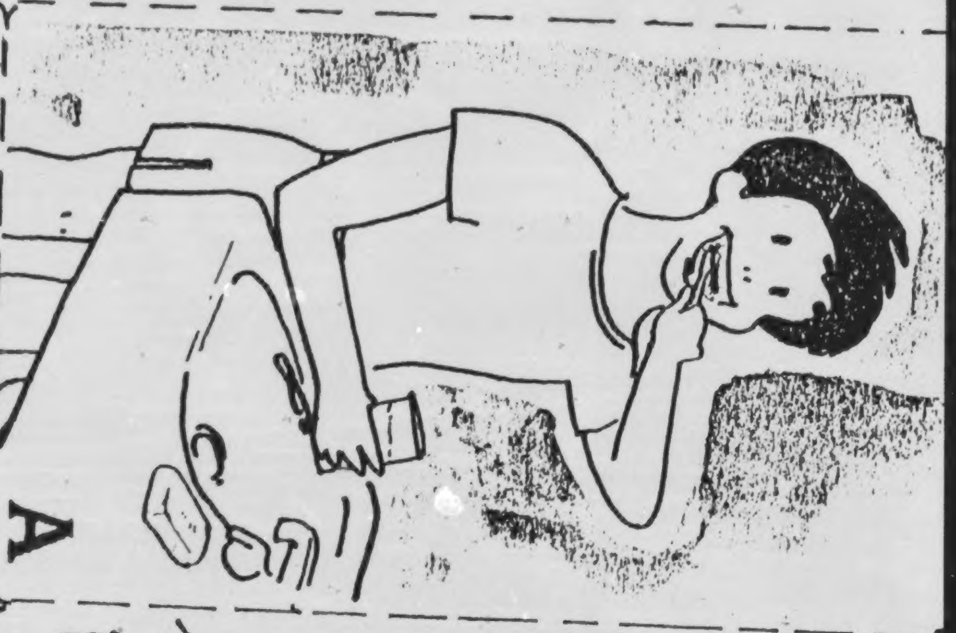
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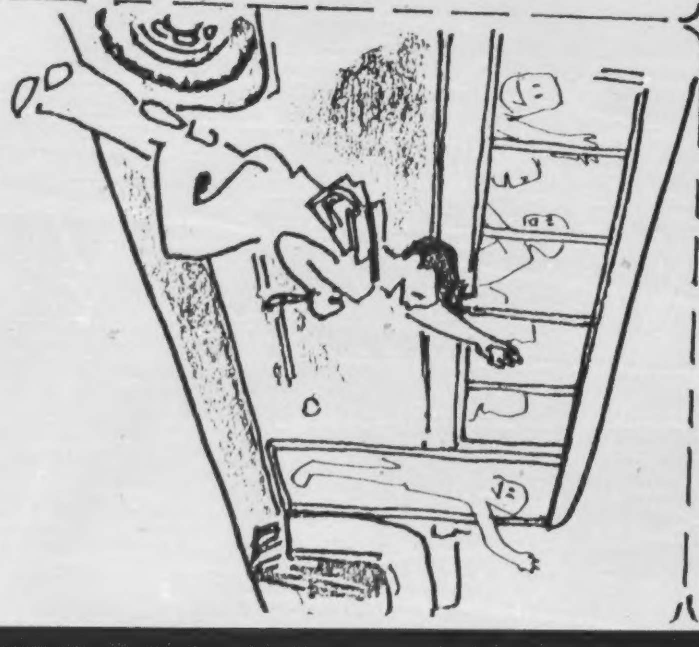
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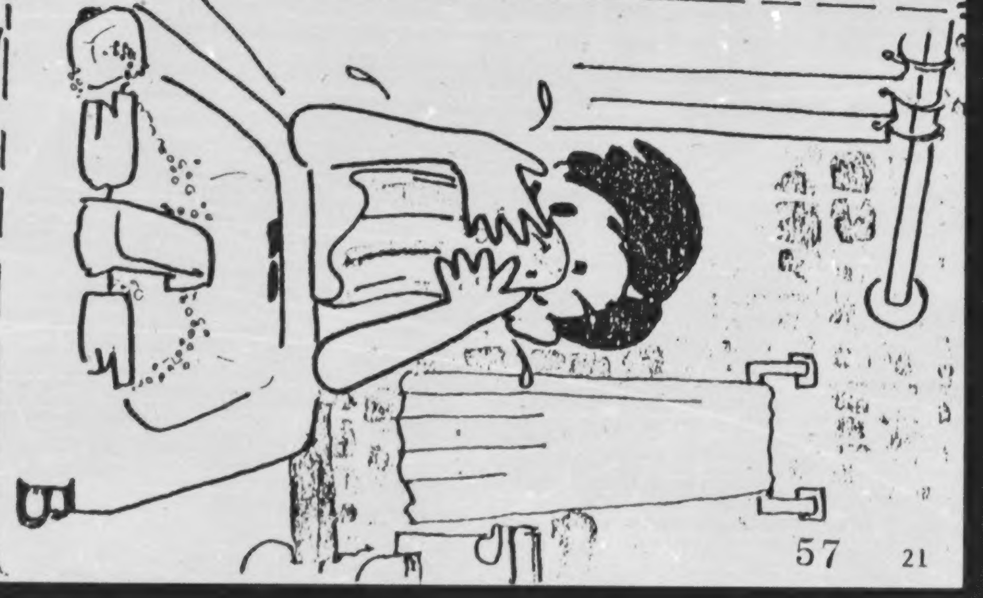

B

THIRD ACTIVITY FOR SKILL D

Continue the game, asking other children to simulate other activities, such as: looking for and eating a fruit, washing his hair and combing it, wrapping a present, etc. In each case, the children should indicate the activity that occurs first, then the one that logically follows it, etc.

FOURTH ACTIVITY FOR SKILL D

Invite the children to play the game again. This time they will pretend that they have to complete tasks such as: making the bed, taking a bath, washing the dishes, etc. In each case, the children must indicate what they would do first, second, etc.

FIFTH ACTIVITY FOR SKILL D

Show a series of drawings showing someone putting on socks and shoes:

a. with the socks and shoes on, but untied

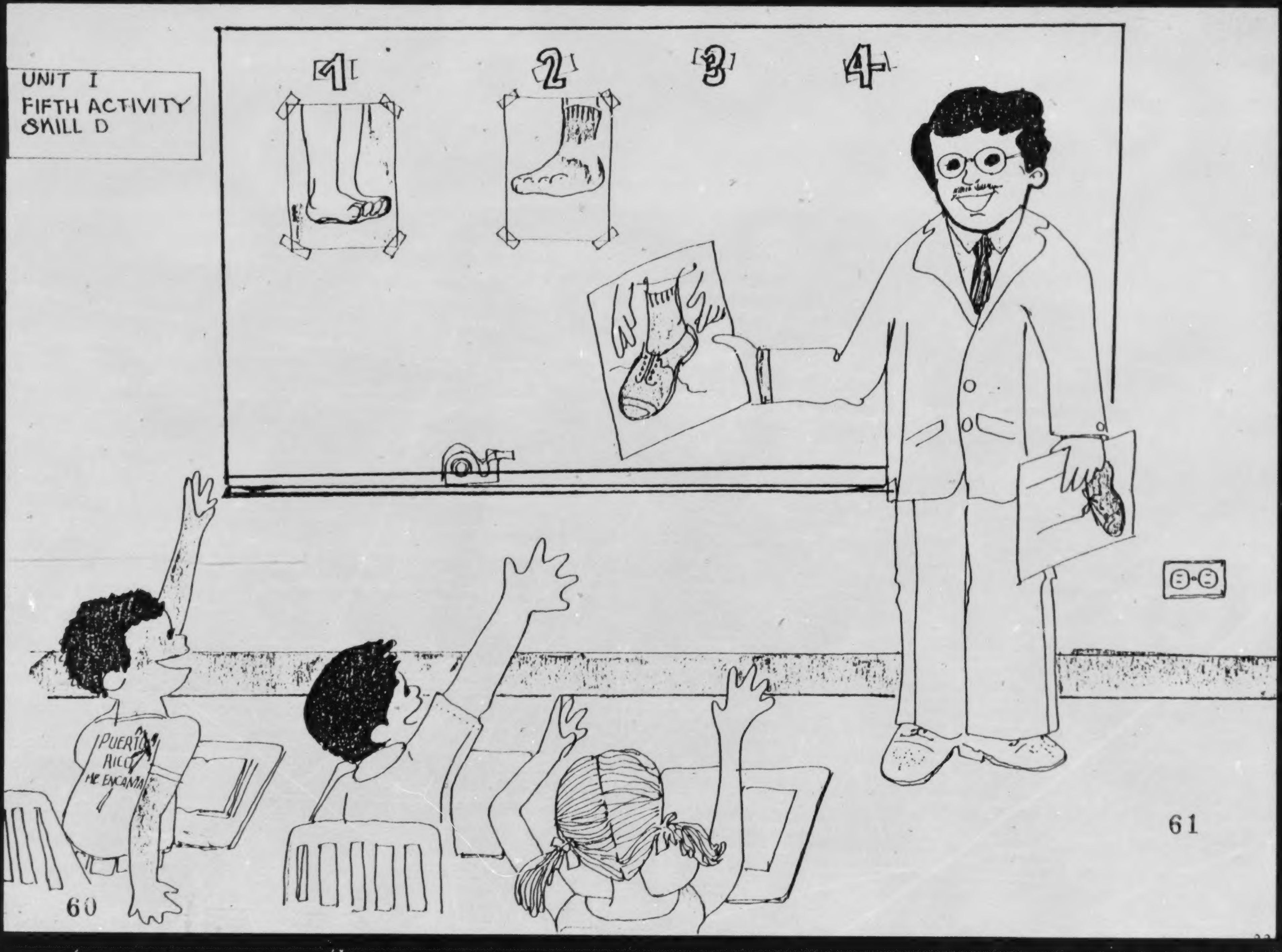
b. barefooted

c. with the socks and shoes on and already tied

Using numerals, the child will indicate the proper order of these pictures. (Refer to drawing on next page)

SIXTH ACTIVITY FOR SKILL D

Distribute cut-out pictures, drawings, or comic strips which contain events in sequence; then ask the children to put them in order.


UNIT I
FIFTH ACTIVITY
SKILL D
1
2
3
4
PUERTO RICO ME ENCANTA

SKILL E: Is able to compare the time of occurrence and the frequency of occurrence of different events.

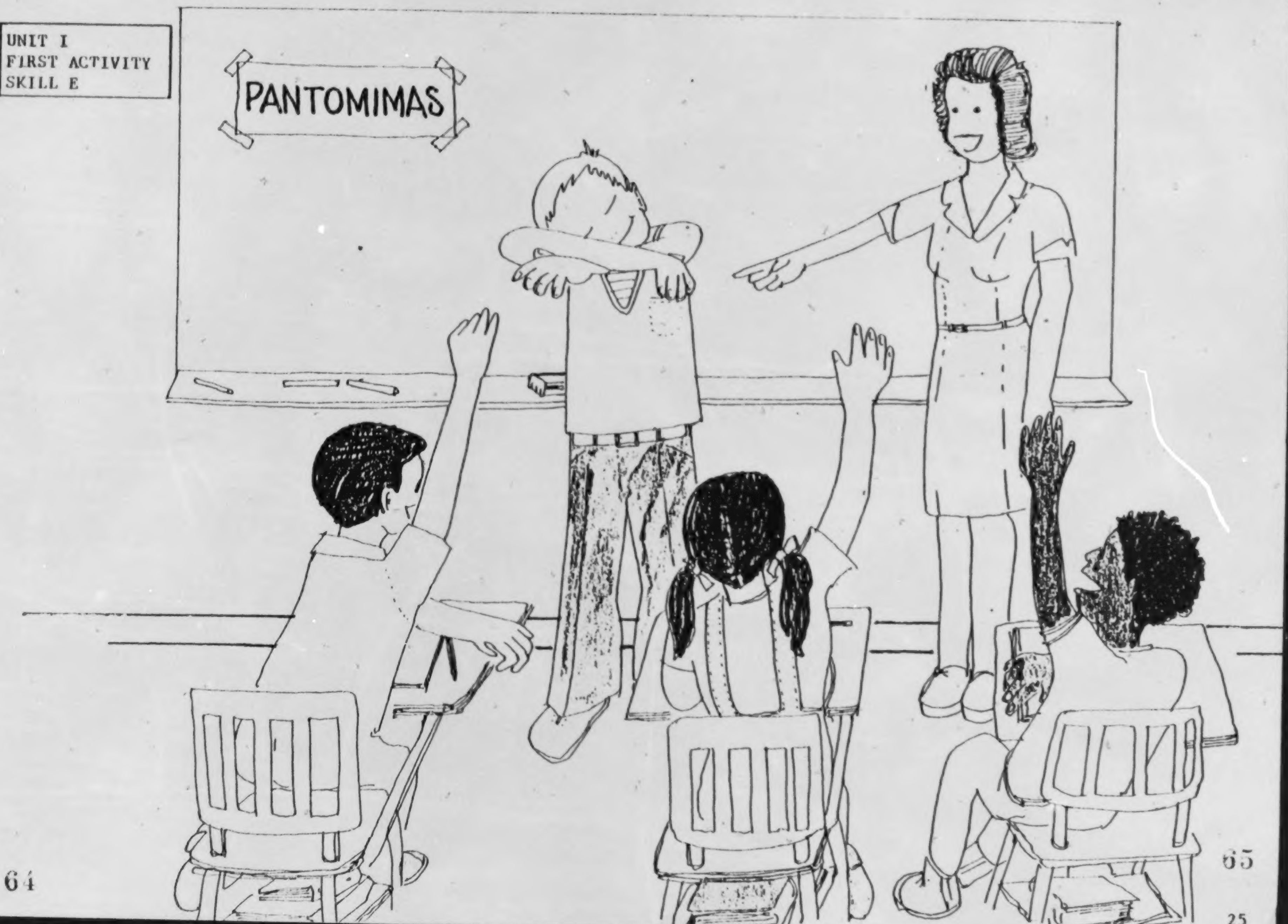
VOCABULARY:

- day
- night
- noon
- midday
- morning
- afternoon
- evening

FIRST ACTIVITY FOR SKILL E

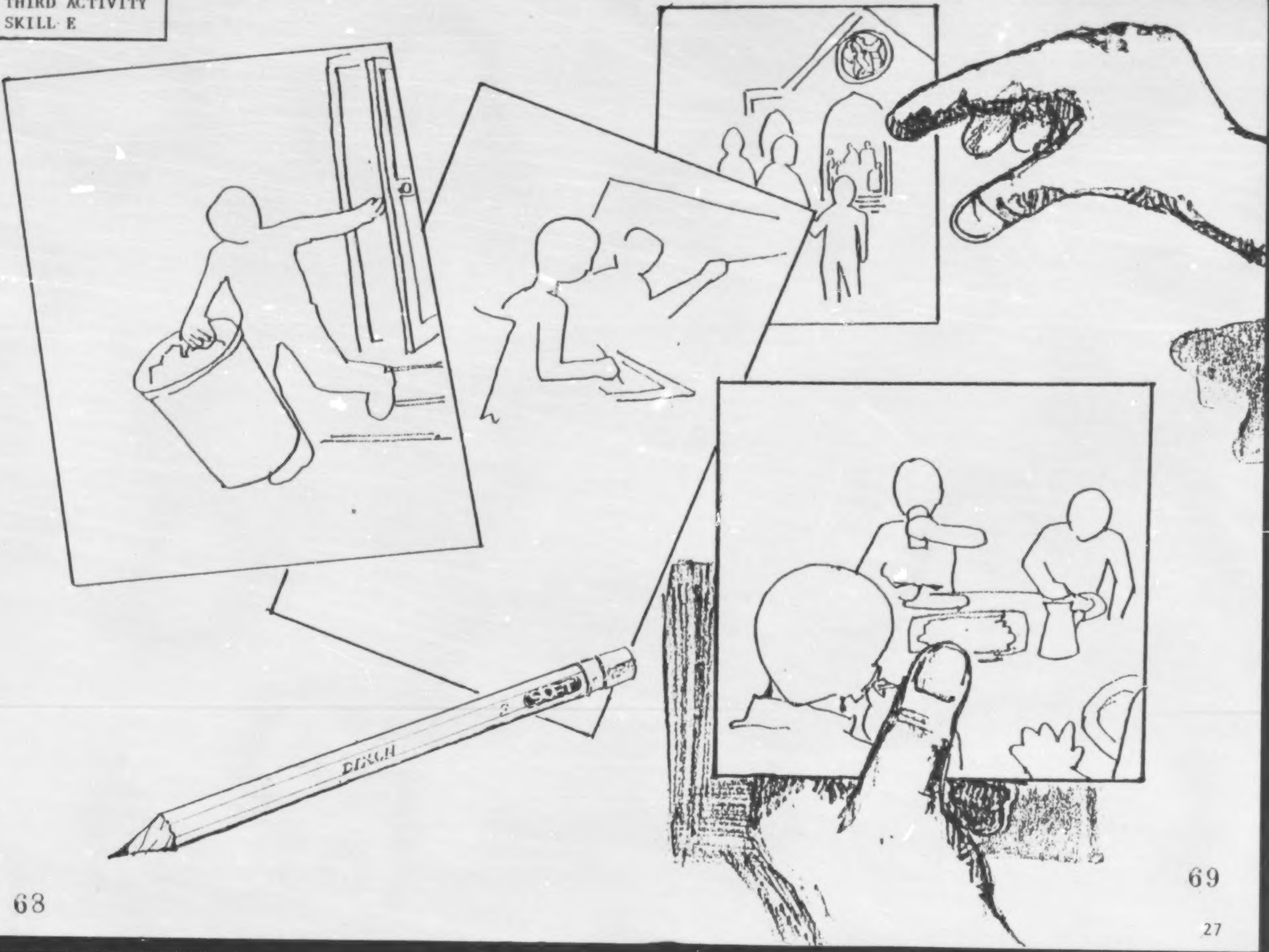
Invite the children to play "Las pantomimas." Different children will come to the front of the group and will show, without talking, some of the activities they carry out daily. While the child who is in front does his pantomime, the children will try to guess the activity that has been performed. Ask questions which will focus on the time that these events occur and the frequency of their occurrence. For example: ¿Cuántos de ustedes también llevan a cabo la actividad que demostró ______________? ¿Durante qué parte del día la haces? ¿Cómo llamamos a la parte del día antes del almuerzo (La mañana). ¿Hacemos muchas cosas por la mañana? Entonces, ¿es más larga o más corta la mañana que el día? ¿Durante qué parte del día almorzamos? (Al mediodía). Después del mediodía, ¿qué parte del día es? (La tarde) ¿Qué sigue después de la tarde? (La noche). ¿Cómo sabemos cuándo es de noche? (Está oscuro, se puede ver la luna, se pueden ver las estrellas, etc.) ¿Es la noche más larga o más corta que la tarde? ¿Tiene cada día una noche? ¿Cómo llamamos las diferentes partes del día en que hay claridad? (La mañana, el mediodía, la tarde).

UNIT I
FIRST ACTIVITY
SKILL E


PANTOMIMAS

SECOND ACTIVITY FOR SKILL E	Mention other activities that the children may do throughout the day, such as: eating, sleeping, drawing, watching television, etc. The children will indicate in what part of the day they do these activities. The children may also be asked which of the activities are repeated every day.
THIRD ACTIVITY FOR SKILL E	Show pictures of children carrying out different activities. Ask the children to indicate what each picture represents. Then ask, for example: ¿En qué parte del día se puede llevar a cabo cada una de estas actividades? ¿Podrías realizar algunas de ellas durante otra parte del día que no sea la que has indicado? ¿Cuáles de esas actividades se repiten con regularidad todos los días?

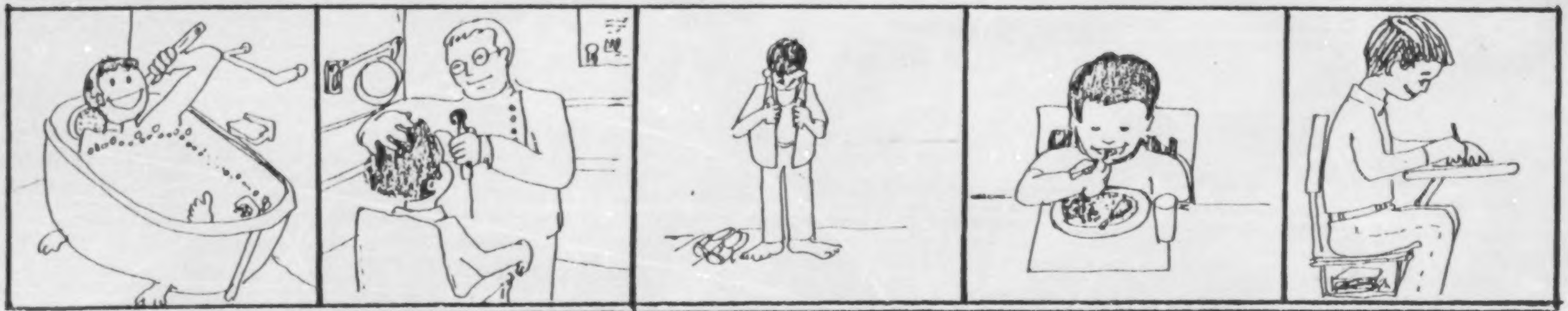
UNIT I
THIRD ACTIVITY
SKILL E



FOURTH ACTIVITY FOR SKILL E

Show pictures that illustrate different activities performed by children. Some pictures should depict activities that are repeated every day, such as taking a bath, eating, getting dressed. Other pictures should show activities which are not repeated, such as visiting the doctor, going to a ball game, going to a circus. Give the children a chart such as the one shown below and have them mark an "X" in the corresponding column.

ACTIVIDAD	SE REPITE	NO SE REPITE
1. Comer	X	
2. ir al doctor		X
3. vestirme	X	
4. ir al circo		X
5. estudiar	X	



Actividades	Se repite	No se repite
1.		
2.		
3.		
4.		
5.		

SKILL F: Is able to compare the day and the week in terms of their duration.

VOCABULARY:
week
Sunday
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday

FIRST ACTIVITY FOR SKILL F

Initiate a brief conversation with the children about the days of the week. Ask them, for example: ¿Qué día es hoy? ¿Qué día fue ayer? ¿Qué día será mañana? ¿Qué otros días conocemos? Have the children repeat the names of the days of the week. Invite the children to count the days: ¿Cuántos son? ¿Qué forman todos esos días juntos? (Una semana.) ¿Es la semana un período de tiempo más largo o más corto que un día? ¿Saben ustedes por qué esos días se llaman así?

SECOND
ACTIVITY
FOR
SKILL F

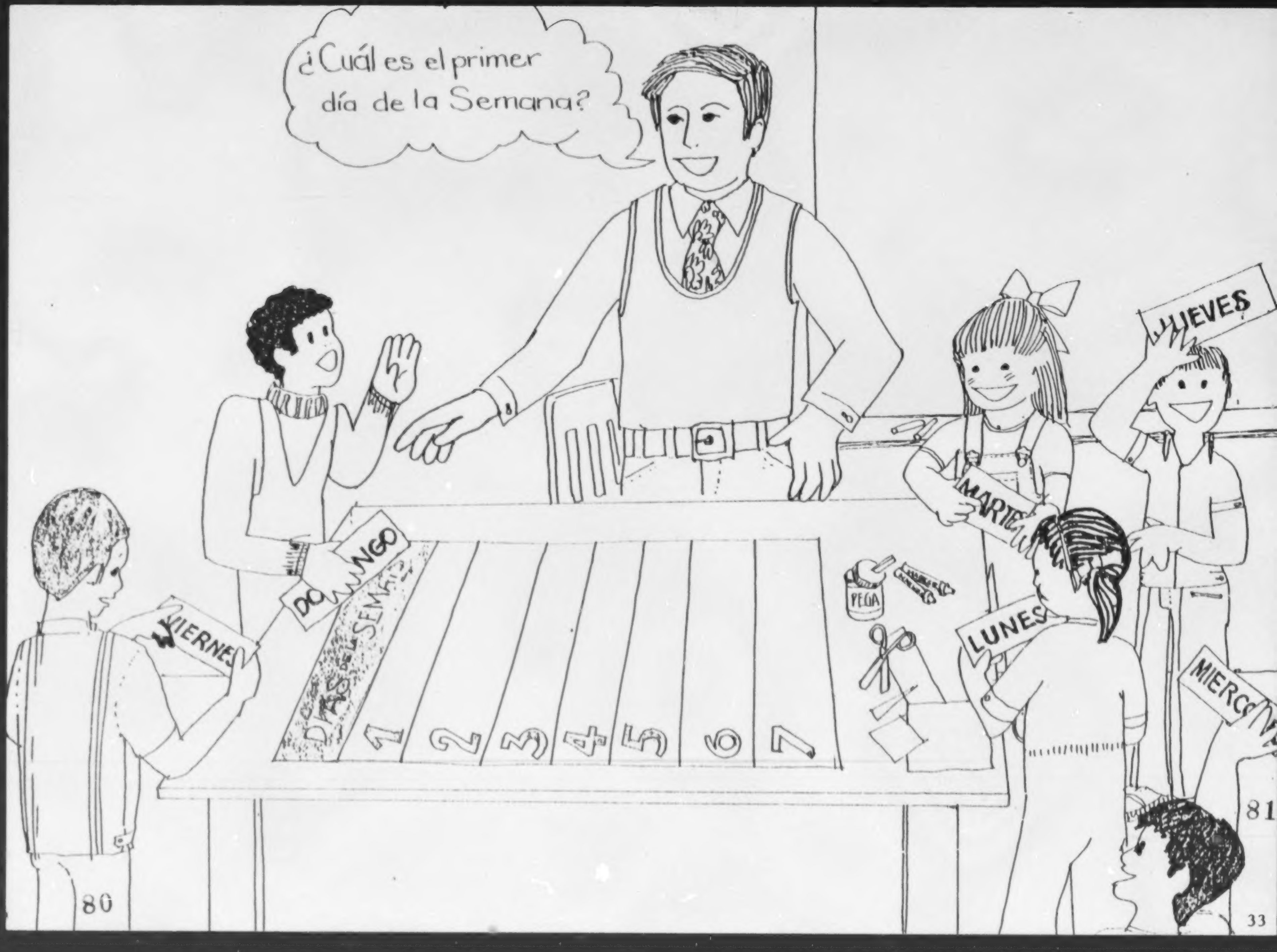
Tell the following story about the origin of the names of the days of the week:

> Hace muchísimos años atrás había un país muy lejano. Los habitantes de ese país tenían unas costumbres y creencias diferentes a las nuestras. Una de las cosas en las cuales se diferenciaban de nostros es que ellos creían y adoraban muchos dioses. Para cada actividad que ellos llevaban a cabo tenían un dios o una diosa. En honor a algunos de esos dioses les pusieron los nombres a los días de la semana.
>
> domingo: los cristianos lo dedican al Señor (Dios: Dominus)
> lunes: en honor a la luna
> martes: en honor a Marte, dios de la guerra
> miércoles: en honor a Mercurio, el mesajero de los dioses
> jueves: en honor a Júpiter, el rey de los dioses
> viernes: en honor a Venus, la diosa de la belleza
> sábado: en honor a Saturno

(The teacher may want to point out that in English the days of the week are capitalized, while in Spanish they are not.)

THIRD
ACTIVITY
FOR
SKILL F

Tell the students that they are going to prepare a poster which will represent the days of the week. Ask them: ¿Cuántas divisiones debe tener? (7) Show a sheet of posterboard or cardboard or a large piece of paper on which have been traced the appropriate divisions: ¿En cuál de las divisiones debe colocarse el domingo? ¿Por qué? ¿Cuál debe colocarse después? ¿Y después? (Continue asking questions until the children have indicated where each of the days of the week should go.) Have the names of the days of the week written on pieces of paper. Show one and read the name, then ask: ¿Dónde debe ir éste? Ask the children to place the names in the appropriate places on the poster. Ask different questions as they place the names of the days on the poster. Ask, for example: ¿Qué representa cada división? (Un día.) ¿Qué representan todas las divisiones juntas?(Una semana.) Cuántas veces en el día vienes a la escuela? ¿Cuántas veces a la semana vienes a la escuela? ¿Cuál período de tiempo es más largo, el día o la semana?

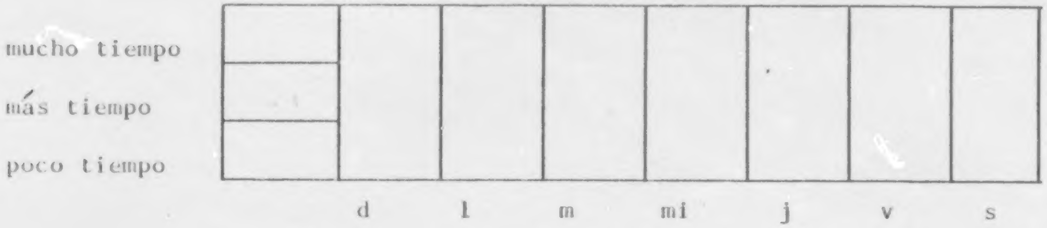

¿Cuál es el primer día de la Semana?
JUEVES
MARTE
DO NGO
VIERNES
DIAS DE LA SEMA
1
2
3
4
5
6
7
PEGA
LUNES
MIERC

FOURTH ACTIVITY FOR SKILL F

Show several pictures of children engaging in different activities and ask the children to indicate what each one depicts. Ask questions which focus on the appropriate day of the week for these activities. For example: Si tu fueras a llevar a cabo esta actividad,¿en qué día la harías? Do the same thing with each one of the pictures.

FIFTH ACTIVITY FOR SKILL F

Distribute to each child a sheet of paper on which the days of the week are indicated. In addition, there should be some lines which represent time intervals of "a little time", "more time", and "a lot of time". (see illustration below)

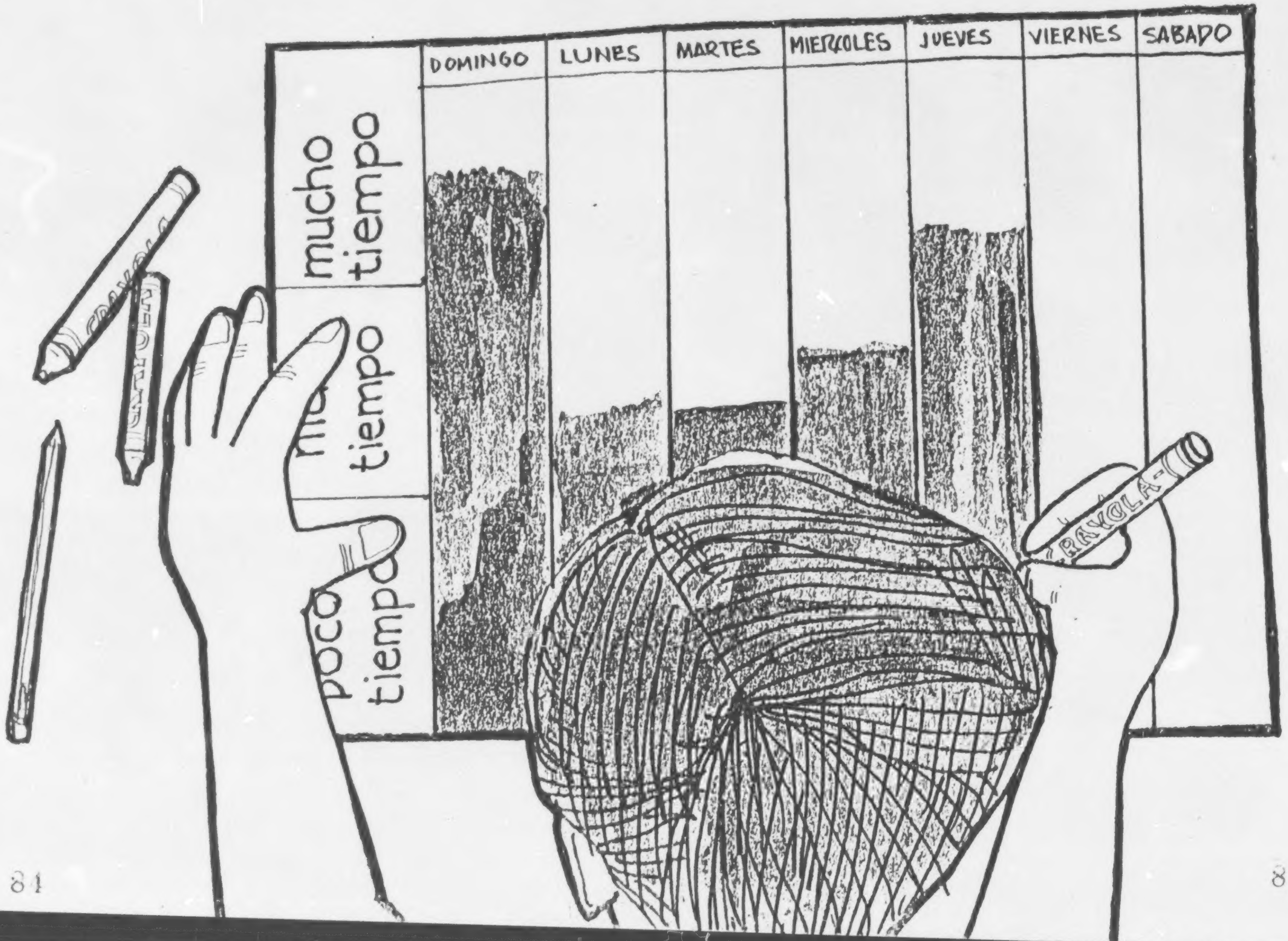


Tiempo Que Jugaron en una Semana

The children will draw a line across in each column corresponding to each day of the week and the appropriate amount of time spent playing on that particular day. "Time spent playing" will be measured in terms of "a little time", "more time", and "a lot of time." Once they have drawn the lines which indicate the time spent playing, the children may color the space in each column.

Note that a child's graph would look like the one shown on the following page.

The teacher may analyze some of the graphs by means of questions such as: ¿Qué día jugó ________ más tiempo? ¿Poco tiempo? ¿Mucho tiempo? ¿Cómo compara el tiempo que jugó ________ el domingo con el lunes? ¿Por qué jugó mucho tiempo el domingo?

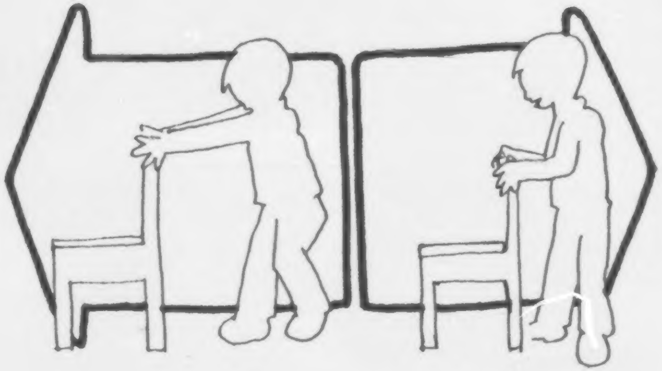

DOMINGO
LUNES
MARTES
MIERCOLES
JUEVES
VIERNES
SABADO
mucho tiempo
ma tiempo
poco tiempo
CRAYOLA
RAYOLA-

SKILL G: Is able to identify and describe forces such as pulls and pushes.

VOCABULARY:
pull
push
force

FIRST ACTIVITY FOR SKILL G:

Place a chair in front of the class. Demonstrate the use of force by pushing the chair away from you and pulling the chair toward you. Begin with a question such as: ¿Qué tendríamos que hacer para mover la silla? Ask a student to move the chair. Repeat the question: ¿Cómo (the child's name)movió la silla? The children should answer, "la haló" (if he moved it toward himself) or "la empujó" (if he moved it away from himself). Now ask the student to do the opposite of what he did before. Repeat the question to the rest of the class.



SECOND ACTIVITY FOR SKILL G

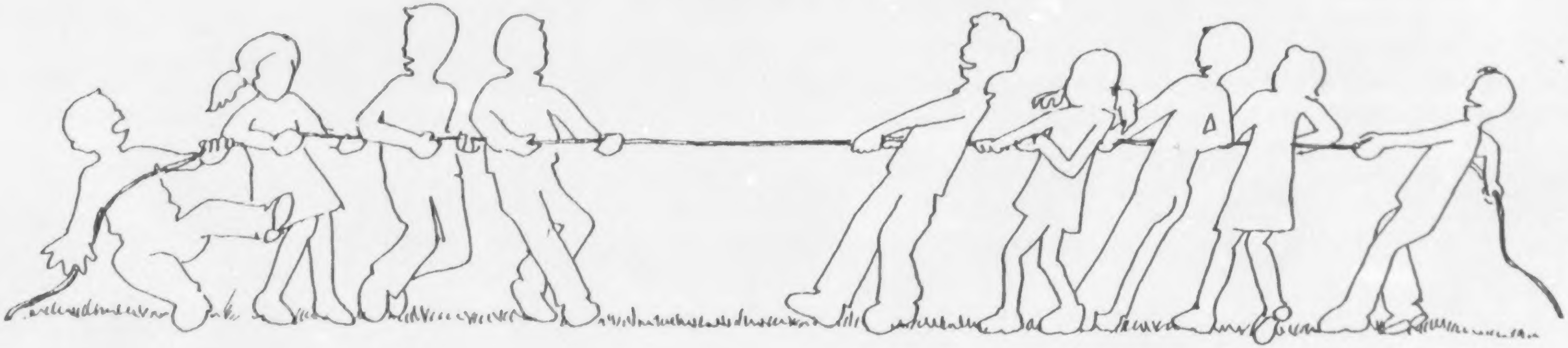
Ask two or three students to simulate what they would do to swing a friend in a swing. Ask, for example: ¿Lo halarían o lo empujarían? Bring out the fact that either a push or a pull may be used to begin the motion of the swing.

THIRD ACTIVITY FOR SKILL G

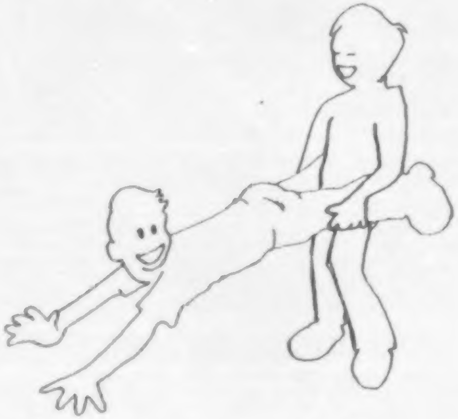
One student will pitch a ball to another one. The latter will hit it. ¿Qué hace (the one who threw the ball)? ¿Qué hace (the one who batted it)? Bring out the fact that in this case both the pitcher and catcher are using pushing forces. That is, they are both pushing the ball away from themselves.

FOURTH ACTIVITY FOR SKILL G

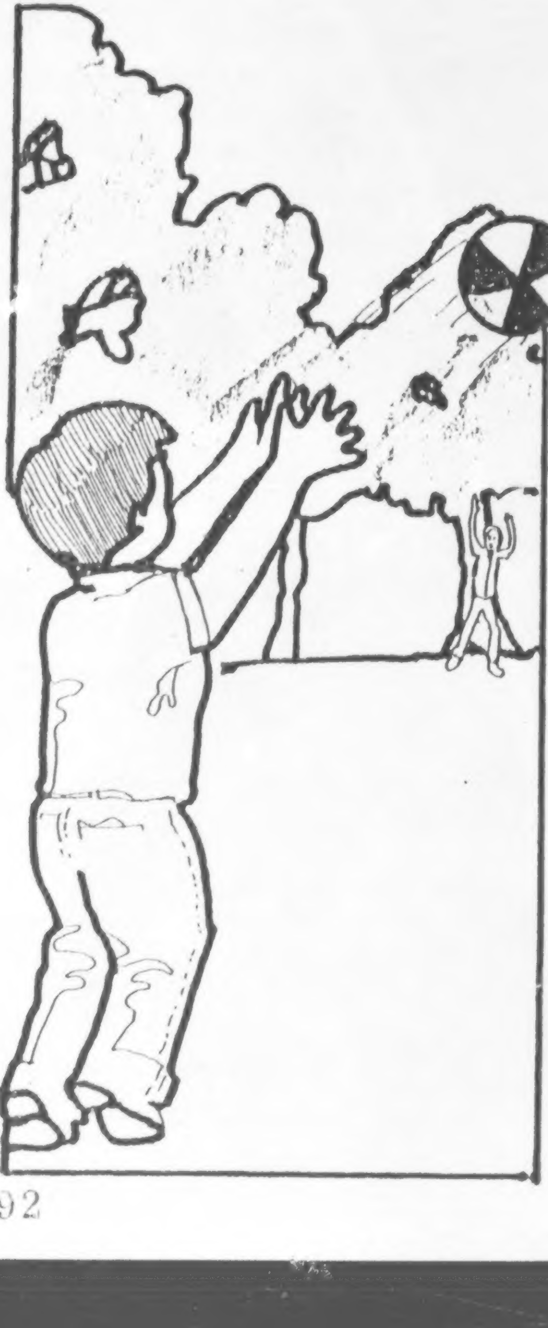
Give a piece of string or light rope to a group of students and ask them to pull it from both ends. Ask, for example: ¿Quiénes ejercieron más fuerza? ¿Halaron más o empujaron más?



FIFTH ACTIVITY FOR SKILL G	Ask each student to choose a partner. One will pretend to be a wheelbarrow; the other will make the wheelbarrow move. The children will identify the action that they perform as pushing or pulling as they lift the legs of their partners and move them forward.



SIXTH ACTIVITY FOR SKILL G	Ask a student to open the drawer of your desk. Then you may ask: "¿Qué hiciste para abrir la gaveta?" Another student will close the drawer. ¿Qué hiciste para cerrarla?
SEVENTH ACTIVITY FOR SKILL G	Show several pictures or drawings of actions so that the children may identify them as pushing or pulling. Examples: a child throwing a ball up in the air a child opening a can of juice with an opener a child digging up dirt with a shovel, etc.



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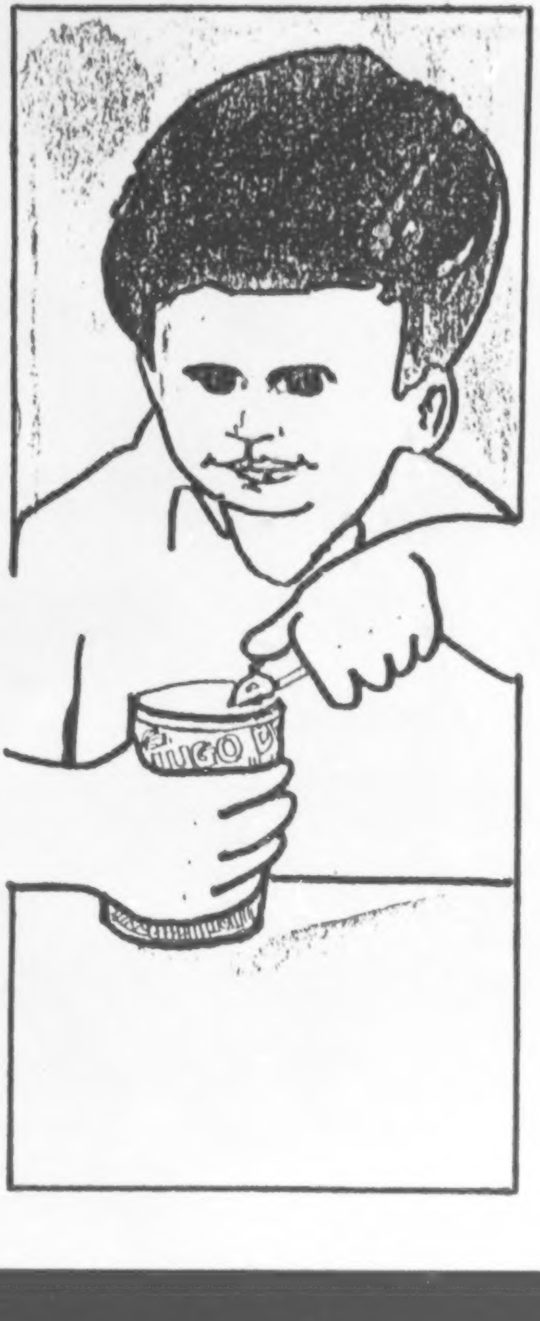
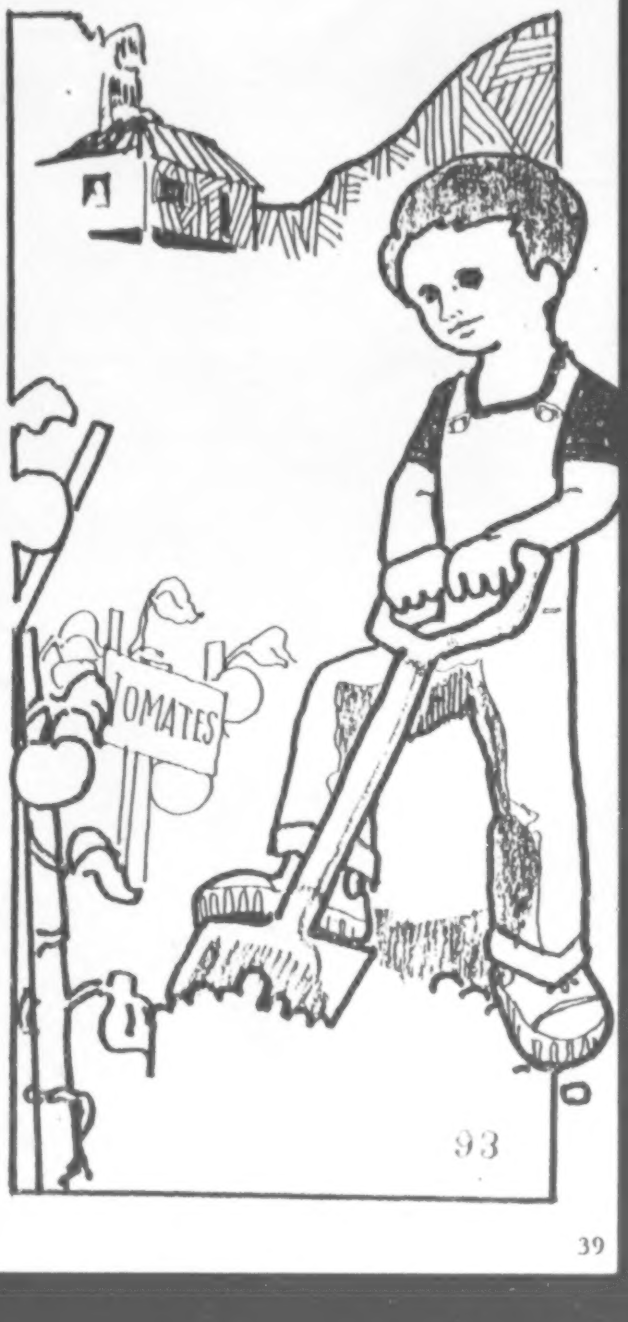
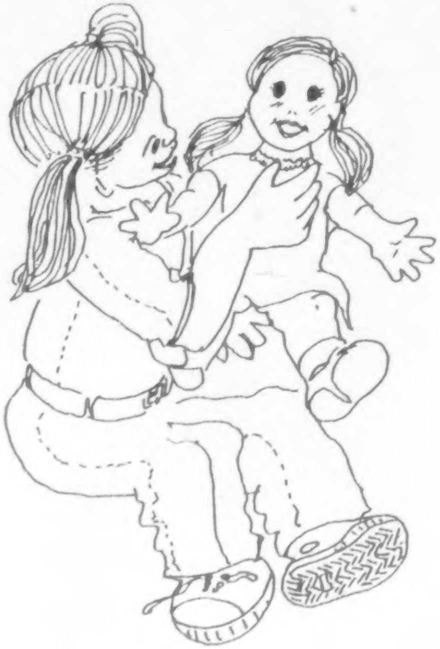




93

SKILL H: Is able to identify characteristics of living things.

VOCABULARY: living
non-living



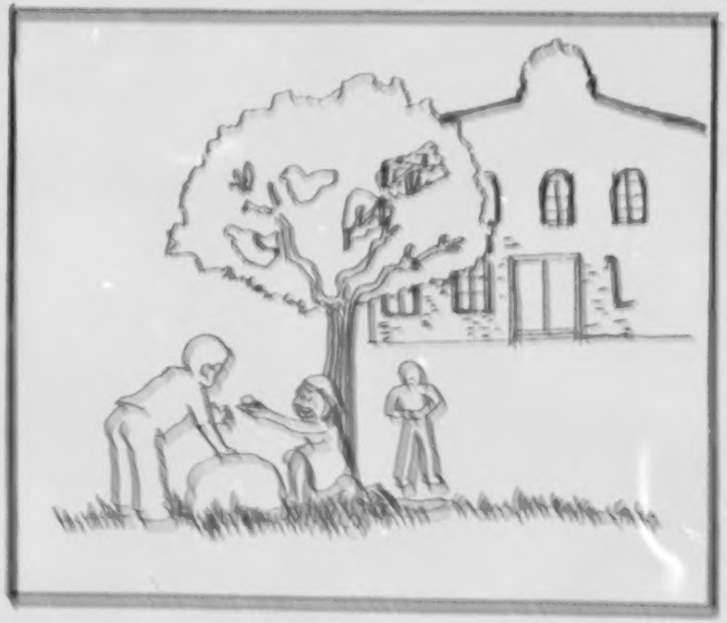
FIRST ACTIVITY FOR SKILL H:

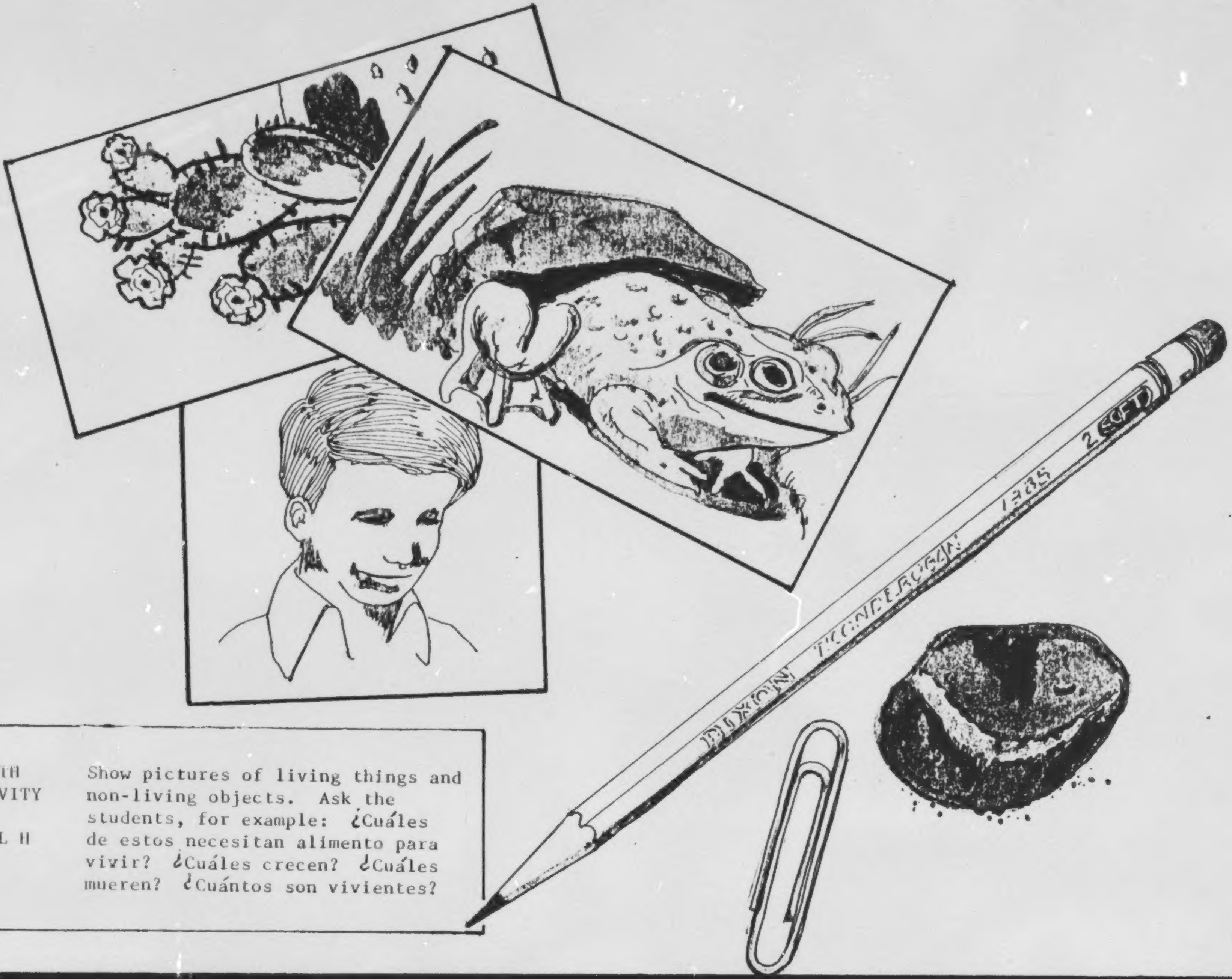
Ask a girl to stand in front of the group, and give her a doll. Invite the students to compare the girl with the doll. (This will be more interesting if you can obtain a doll that walks, cries, etc.) Ask questions such as: ¿Hay algo parecido entre ellas? ¿Hay alguna diferencia entre ellas? ¿Qué puede hacer la niña que no puede hace la muñeca? (Comer, jugar, vestirse por sí misma, respirar, crecer, etc) ¿Por qué la niña puede hacerlo y la muñeca no? (Porque la niña está viva)

[illegible]

THIRD ACTIVITY FOR SKILL 8:

Take the children outside in the yard to observe their surroundings. Upon their return to the classroom, have them prepare a list of living and non-living things that they have observed.

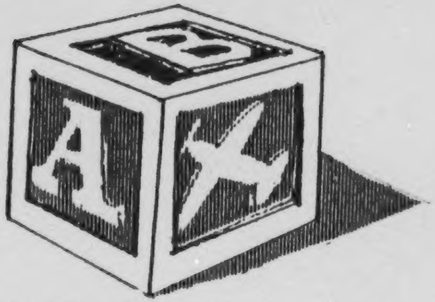



DIXON
TICONDEROGA
1385
2 SOFT

FOURTH ACTIVITY FOR SKILL H

Show pictures of living things and non-living objects. Ask the students, for example: ¿Cuáles de estos necesitan alimento para vivir? ¿Cuáles crecen? ¿Cuáles mueren? ¿Cuántos son vivientes?

UNIT 2: My School



Skill A:	To recognize which things hide parts of other ones when they are situated in the same line of vision but at different distances from the observer.
Skill B:	To predict the direction in which an object will move when a force is applied to it.
Skill C:	To identify and name the parts of a plant.
Skill D:	To measure the size of a plant as it grows.
Skill E:	To point out some of the characteristics of liquids and solids.
Skill F:	To group substances into liquids and solids.
Skill G:	To identify and name the following two-dimensional shapes: circle, triangle, square and rectangle.
Skill H:	To group several objects by their shape color and size.
Skill I:	To compare distances utilizing linear units.

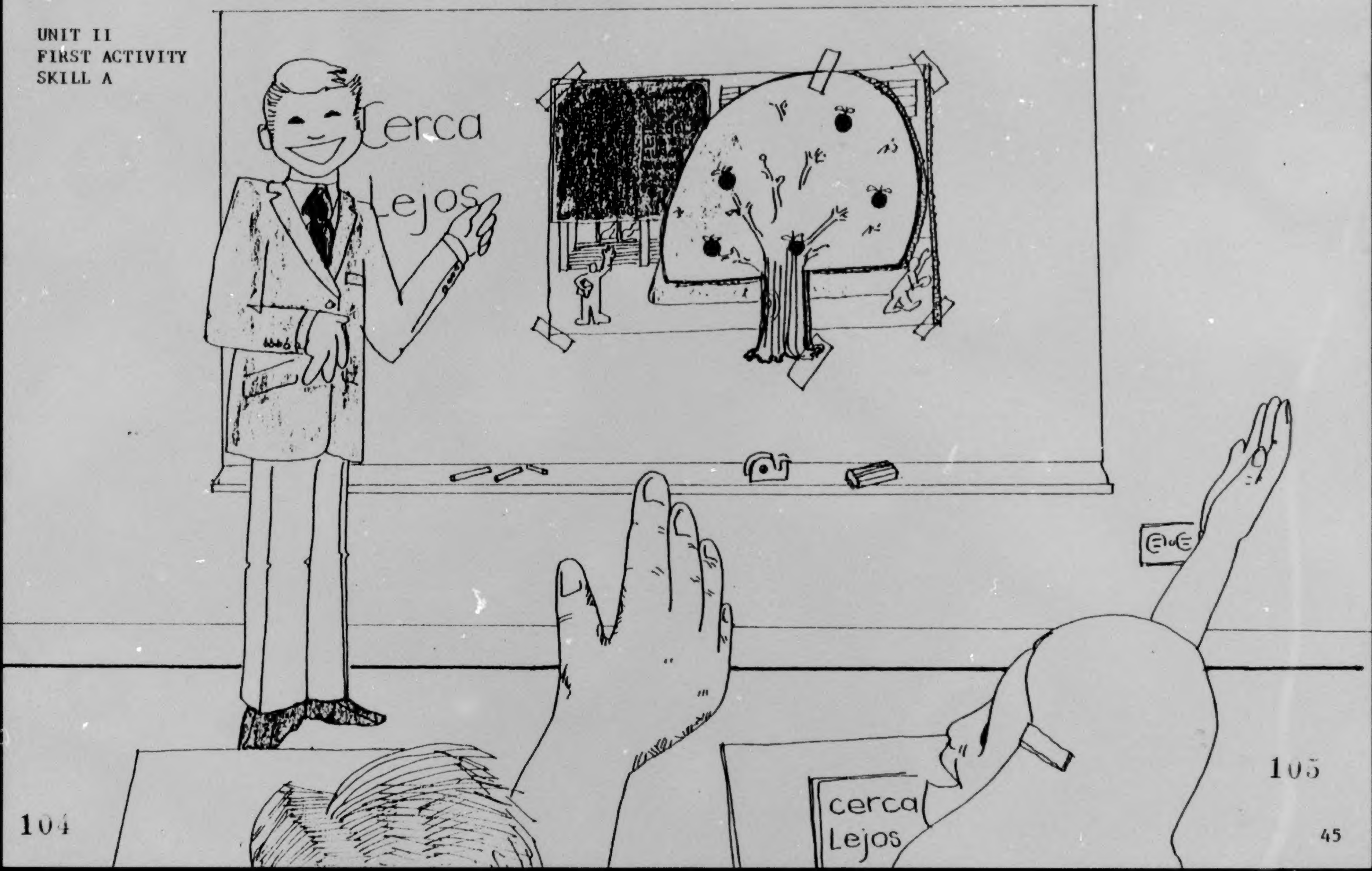
SKILL A: Is able to recognize which things hide part of other ones when they are situated in the same line of vision, but at different distances from the observer.

VOCABULARY:
hide
far
near

FIRST ACTIVITY FOR SKILL A

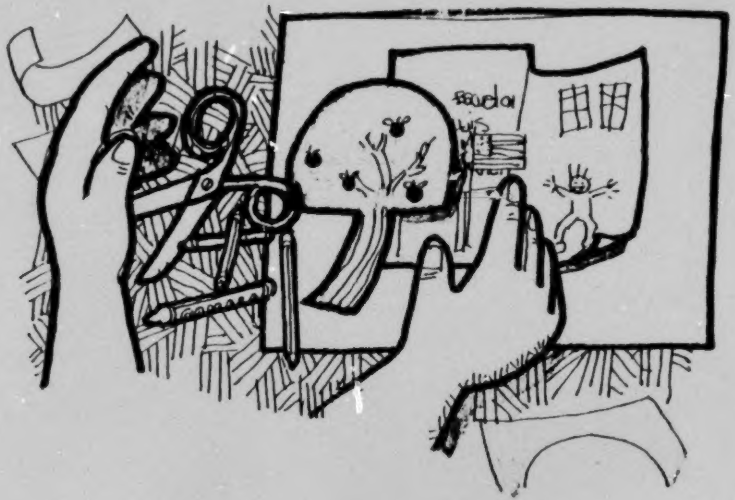
Choose two cut-out figures (such as a tree and a school). Place the first figure on the feltboard, bulletin board or blackboard. Place the second figure so that it partially covers the first one. Ask the children to decide which of the two figures is closer to them. Who are the observers? The children should realize that they themselves are the observers, in this case. Another person in a different location would observe the figures differently. Switch the position of the figures. ¿ Qué figura está más cerca ahora? Use the same procedure with other cut-out figures, always asking the children to tell you which figure is closer to them.

UNIT II
FIRST ACTIVITY
SKILL A


Cerca
Lejos
cerca
Lejos

SECOND ACTIVITY FOR SKILL A

Invite each child to use the cut-out figures to demonstrate superposition in his own way (so that one figure partially covers the other). You may ask, for example: ¿Quién puede hacer que la escuela parezca estar más cerca que el árbol desde donde se observa?

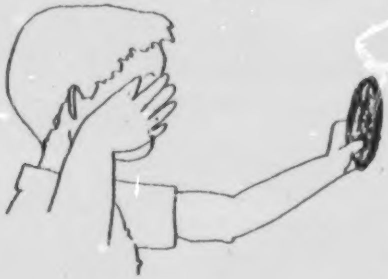


THIRD ACTIVITY FOR SKILL A

Have the children make arrangements of various classroom objects, so that one obscures part of another. When the children begin to realize that they can infer which object is near and which one is far from them, increase the complexity of the problem by using more than two objects. When each new combination of objects is set, ask the children to tell you how they know which object is nearer and which one is farther from them.

FOURTH ACTIVITY FOR SKILL A

Distribute round discs. Have the children cover one eye with one hand and with the other move the round disc nearer and/or farther from the uncovered eye until it obscures a near object or a distant one. (Make sure that the disc does not touch the child's eye, so that it will not harm him.) Ask questions, such as: ¿Está el objeto cerca o lejos del ojo cuando oculta un objeto cerca? ¿Un objeto lejos? ¿Cómo un objeto pequeño, como una chapa, puede usarse para determinar si un objeto está cerca o lejos? (Por la distancia entre el ojo y la chapa, a mayor distancia entre el ojo y la chapa más lejos está el objeto; a menor distancia entre el ojo y la chapa más cerca está el objeto del observador.)

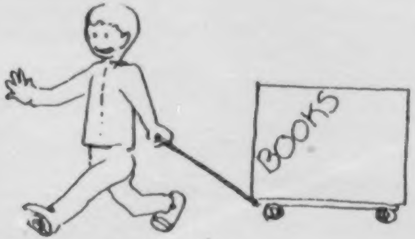


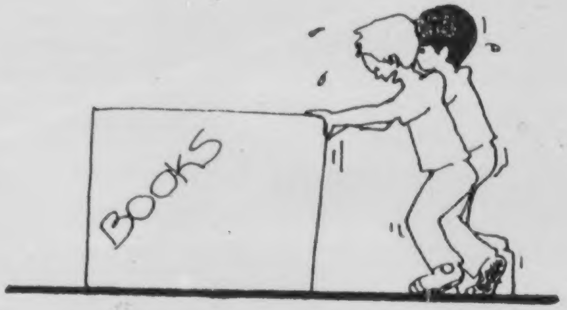
SKILL B: Is able to predict the direction in which an object will move when a force is applied to it.

VOCABULARY:
pull
push
force

FIRST ACTIVITY FOR SKILL B

Have two or three students try to move a closed box which contains several heavy classroom objects. When the children realize that the box is heavy, tell the rest of the class to suggest ways to move the box. It is very probable that they will mention different ways, such as drag it, roll it, lift it, carry it, kick it, pull it with a rope, push it with a pole, etc. Let the children try some of these methods.



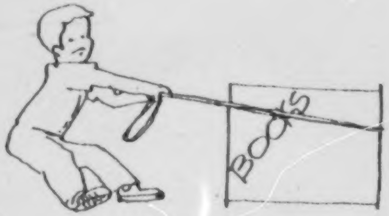


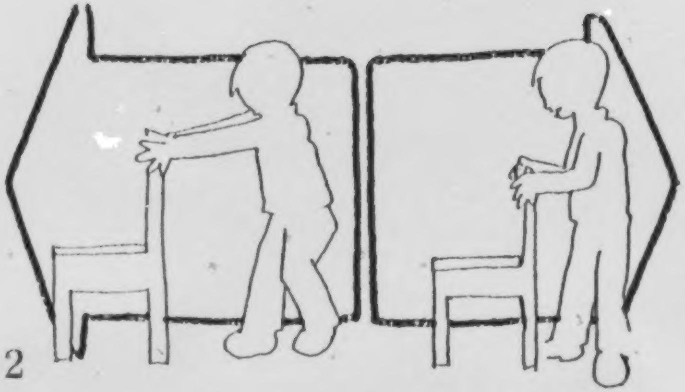
SECOND ACTIVITY FOR SKILL B

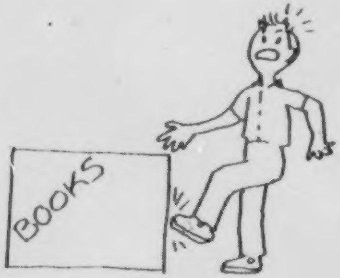
Suggest to the children that they comment on their experiences in trying to move the heavy box. Ask them to identify the way (or ways) in which they succeeded in moving the box with greater or lesser ease. Select the same children from the previous activity, and give them another closed box (an empty box). Tell them to try to move the box in the same ways as in the previous activity. The children will compare the actions that they performed in both activities. After the children have described and identified the boxes, the direction and the speed with which they moved, lead them to identify each action as a push or a pull. Make sure that the children have it very clear in their minds that a pull is a force exerted towards the person or object that exerts it, and that a push is a force exerted away from the person or object that exerts it.

THIRD ACTIVITY FOR SKILL B

Show pictures involving pushing and pulling objects and have the children predict the direction in which they will move.

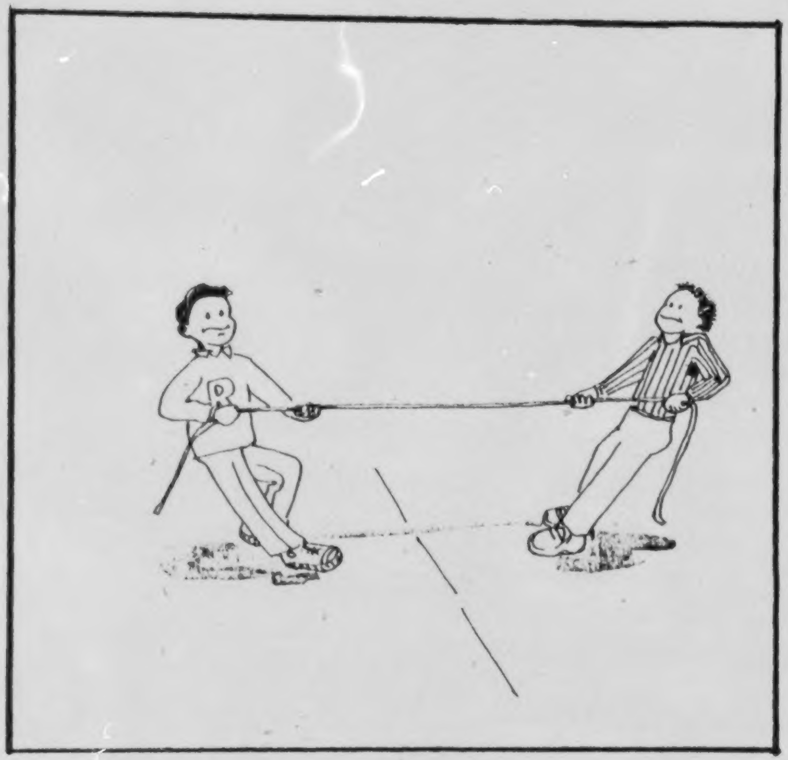


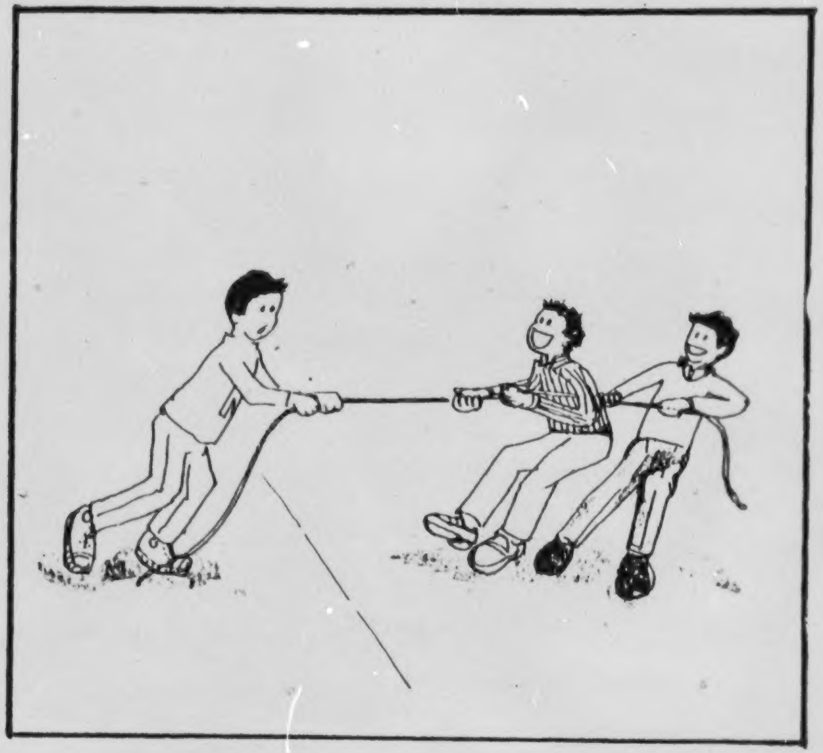




FOURTH ACTIVITY FOR SKILL B

Select two children who are of more or less the same size. Give each one one end of a rope so that he holds it in his hand. Draw a line approximately three feet long on the floor. The two students will stand at points equidistant from the line so that the rope is crossing the line. Each student will pull his end of the rope. If the two students are almost of equal size and if they pull with the same force, the movement produced by either one of them will be negligible or none at all. Then ask a third child to pull on one end of the rope, so that there are two children pulling on one end while only one is pulling on the other end. Have the children describe how the situation changed when at first the participants are equal and then there is greater force on one end. The children will indicate in what direction the movement occurred.





FIFTH ACTIVITY FOR SKILL B

Have the children look around the school for objects that they can move. They will then compile a list in their notebooks in the following manner:

objeto	empujar	halar

They will make a check mark in the appropriate column to indicate whether the object was moved by pushing or by pulling.

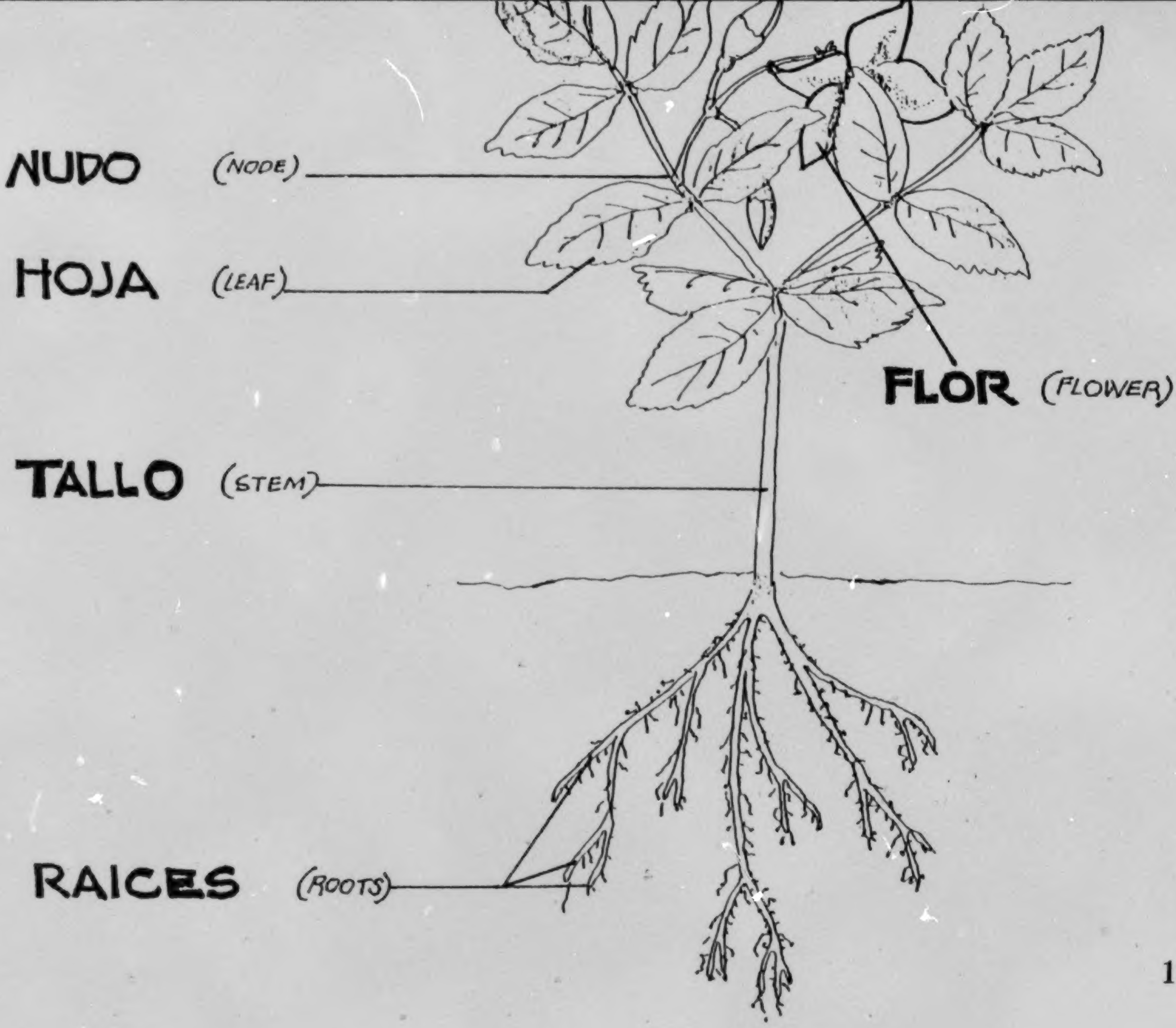
SKILL C: Is able to identify and name the parts of a plant.

SKILL D: Is able to measure the size of a plant as it grows.

VOCABULARY:

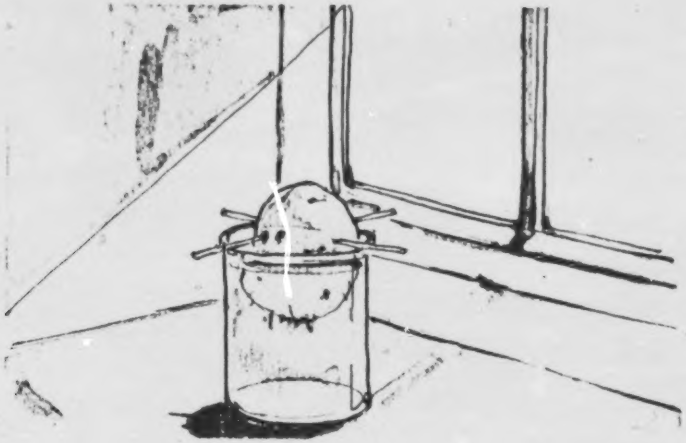
- plant
- leaf
- stem
- root
- flower
- grow
- node

FIRST ACTIVITY FOR SKILL C	Take the children outside in the yard so that they can observe growing plants. (Or they can observe indoor plants.) Name some of their parts.
SECOND ACTIVITY FOR SKILL C	Ask each student to draw and color a plant. The children will observe some of these drawings and will name the parts of the illustrated plants. Try to point out that not all plants are green, although most are. Coleus leaves, for example, are mostly reddish.
THIRD ACTIVITY FOR SKILL C	Draw a plant so that the children may identify its parts.


NUDO (NODE)
HOJA (LEAF)
FLOR (FLOWER)
TALLO (STEM)
RAICES (ROOTS)

FIRST ACTIVITY FOR SKILL D

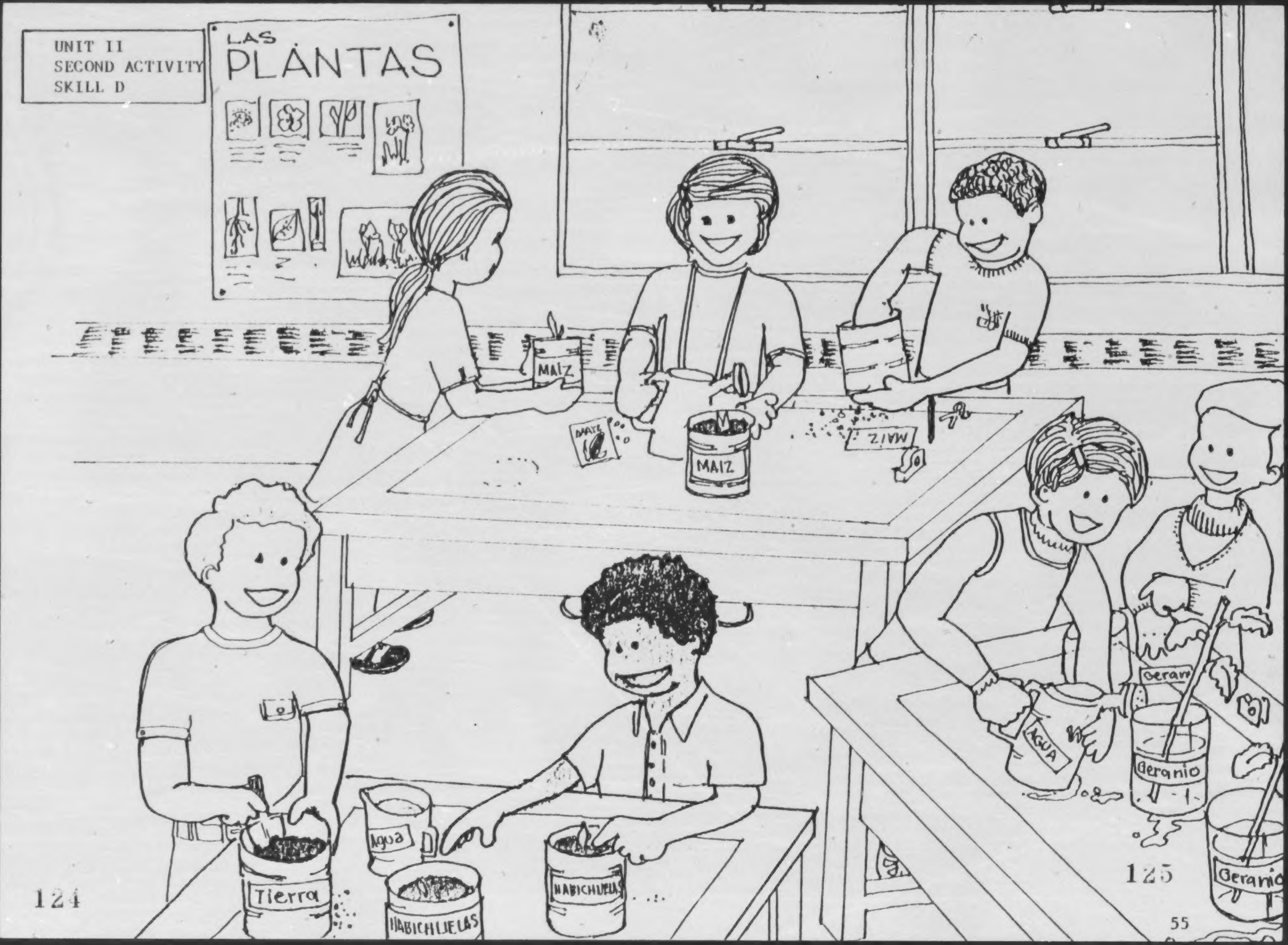
Form groups of several students. Provide one group with a glass jar or a glass, several toothpicks, water and a potato or sweet potato. Have them put water in the glass and place the potato or sweet potato in the glass so that part of it remains out of the receptacle. It can be held in place with the toothpicks. This should be put in an appropriate place until the potato begins to sprout. Then it is placed where it can receive sunlight. Point out to the children that growing plants is one way of decorating the school.



SECOND ACTIVITY FOR SKILL D

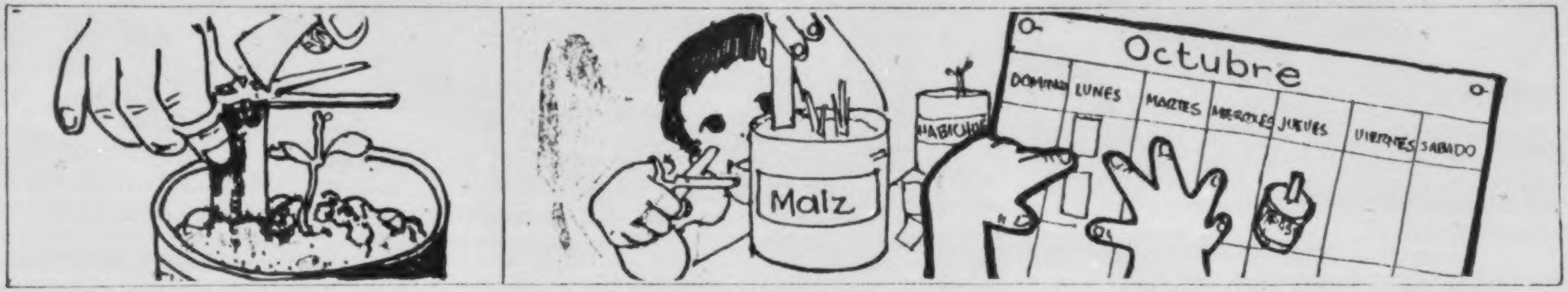
Provide some receptacles (glasses, cups, etc.) filled with earth. Give one group some bean seeds and seeds of corn to another group. Have them plant the seeds. Then discuss what they have to do to take care of the seeds. To another group will be given cuttings of plants that reproduce themselves without seeds. Have the group stick the cuttings in a glass of water. The children may also observe the growth of roots. When the new leaves have grown, the children will compare them with the original leaves. Since this will require some time, the class can go on with another activity. Later, the activity suggested below can take place.

UNIT II
SECOND ACTIVITY
SKILL D


LAS
PLANTAS
MAIZ
MAIZ
MAIZ
MAIZ
Agua
Tierra
HABICHUELAS
HABICHUELAS
AGUA
Geranio
Geranio
Geranio
124
125

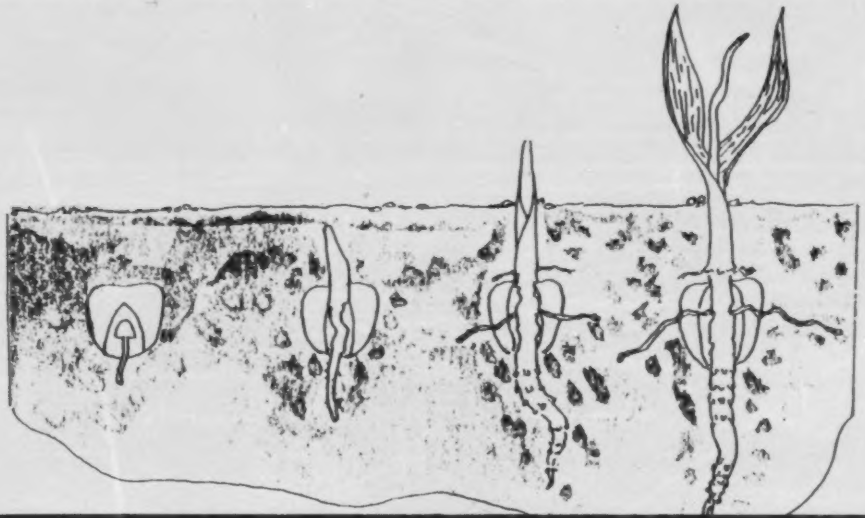
THIRD ACTIVITY FOR SKILL D

Once the seeds planted earlier have germinated, the students will measure the growth of the plants. To accomplish this, a slip of paper is placed beside the plant and cut off at the level of the top of the plant. The piece of paper will be attached to a calendar on the date corresponding to the day the measurement was taken. Each group will use a different color.


Maíz
HABICHUE
Octubre
DOMINGO
LUNES
MARTES
MIERCOLES
JUEVES
VIERNES
SABADO

FOURTH ACTIVITY FOR SKILL D

Draw a plant at different stages of development, and have the children indicate which has grown the most and tell the things necessary for a seed to germinate.



SKILL E: Is able to point out some of the characteristics of liquids and solids.

SKILL F: Is able to group substances into liquids and solids.

VOCABULARY:
liquid
solid
melt

FIRST ACTIVITY FOR SKILL E

Invite the students to play: "Descríbeme." Divide the class into two groups. One student will name an object in the classroom. One or more students will name characteristics of that object. The intent is that they describe it as best they can, mentioning the greatest possible number of characteristics, such as: color, shape, living or non-living, plant or animal, etc. It is possible that the state of the material may be indicated as a characteristic. The teacher will note down the terms used by the children to describe the object. The group that gives the most complete description will receive the highest score.

SECOND ACTIVITY FOR SKILL E

Place on a table a saucer containing a pat of butter or a piece of ice. Leave it for several minutes and ask the children to observe it. When it begins to melt, ask them, for example: ¿Qué está ocurriendo? ¿Por qué le ocurre eso? ¿Qué quiere decir que se derrite? (Que cambia a líquido.) ¿Podrá volver a ponerse duro? Si se pone duro, ¿será líquido? ¿Cómo está ahora? ¿Qué otros líquidos conocen ustedes? Make a list of the liquids that the children mention.

THIRD ACTIVITY FOR SKILL E

Show two identical containers. In one of them will be a liquid, which could be water; and in the other, a solid object, such as a ball, a rock, etc. Ask the children to observe them and to tell you if they are the same, or not. Then ask: ¿ En qué se diferencian? Si viramos el envase que contiene el líquido sobre la mesa, ¿ qué ocurrirá? ¿ Fasaría lo mismo si viramos el envase en el que está el sólido? Repeat with other liquids and solids.

FOURTH ACTIVITY FOR SKILL E

At the side of each of the following have the students write an L if it corresponds to a liquid or an S if it corresponds to a solid.

___ Se derrama y se riega cuando se vira el envase en que está.

___ No necesita estar en un envase para tener forma.

___ Toma la forma del envase en que está.

___ Tiene forma propia.

___ Alqunos pueden derretirse.

FIRST ACTIVITY FOR SKILL F

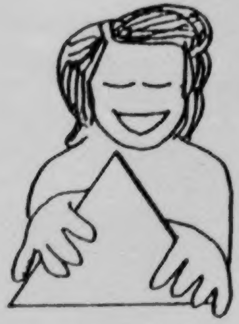
Ask the children to name things that they see in their school Have them group the objects in two columns; one listing solids, the other liquids.

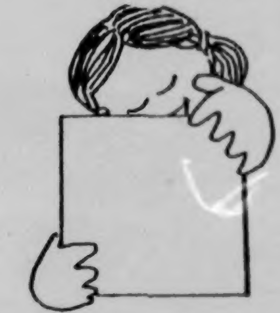
SKILL G:	Is able to identify and name the following two-dimensional shapes: circle, triangle, square and rectangle.
SKILL H:	Is able to group several objects by their shape, color and size.

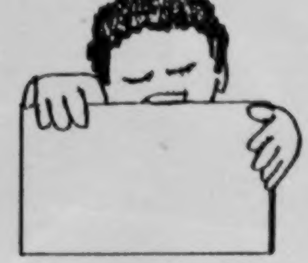
VOCABULARY:
circle
square
triangle
rectangle

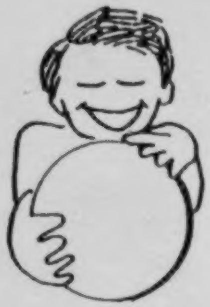
FIRST ACTIVITY FOR SKILL G

Distribute shapes made of cardboard. Ask the children to describe the shapes with their eyes closed while they touch and feel them one at a time. ¿ Cómo es?









SECOND ACTIVITY FOR SKILL G	Ask the children to close their eyes and tell you what they think of when you say cuadrado. Repeat the word several times. ¿De qué se acuerdan? Do the same with the other terms: circle, rectangle and triangle.
THIRD ACTIVITY FOR SKILL G	Distribute to the class triangles, circles, squares and rectangles of construction paper or cardboard in different sizes and colors familiar to the children. Show one of them and ask them to identify its color. All the children who have shapes of that color will raise them. ¿Qué forma tiene tu figura? They will do the same with the figures of other colors.
FOURTH ACTIVITY FOR SKILL G	Show two figures with different shapes, but of the same color. Ask: ¿En qué se parecen? ¿En qué no se parecen?
FIFTH ACTIVITY FOR SKILL G	Show one of the figures from the previous activity and ask all those who have figures of the same shape to show them to the group. Ask, for example: ¿Cómo se llama esta figura? If they do not recognize it, tell them the name and ask several children to repeat it. Repeat the question. Do the same with all four shapes. Ask them to trace around the edges of the figure being shown with their fingers; then have them trace the shape in the air. You may ask: ¿Cómo es? ¿Se parece a algo que tu conoces? ¿A qué se parece?
FIRST ACTIVITY FOR SKILL H	Invite the children to look for and point out things in the classroom that have the same shape as the one you are showing them. ¿Cuántos triángulos ves en el salón? Repeat the activity for color and size.

SECOND ACTIVITY FOR SKILL H

Repeat the above with each of the shapes so that by the end of the activity, they will have identified classroom objects in rectangular; square, circular and triangular shapes. Do the same for color and size.

THIRD ACTIVITY FOR SKILL H

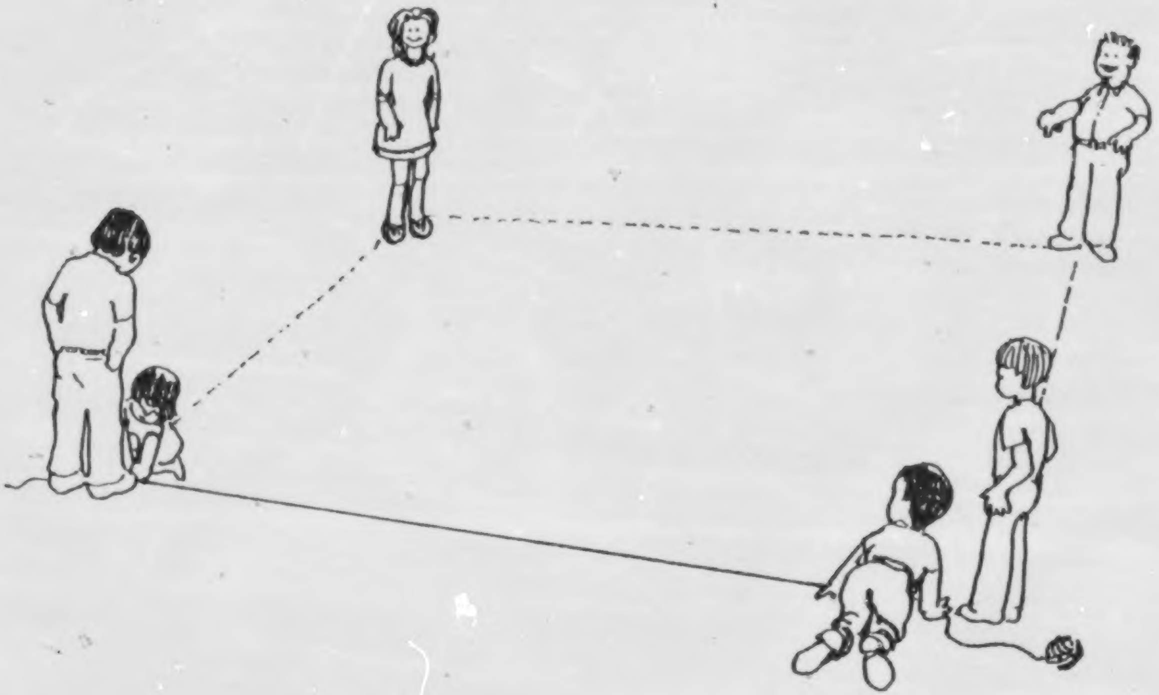
Tell the children to place in the middle of the room all the objects they can. They will then group together those which have a square shape, those with a circular shape, those with a triangular shape, etc. This activity should be repeated with color and size.

SKILL I:	Is able to compare distances utilizing linear units.	VOCABULARY:	short, shorter, shortest long, longer, longest

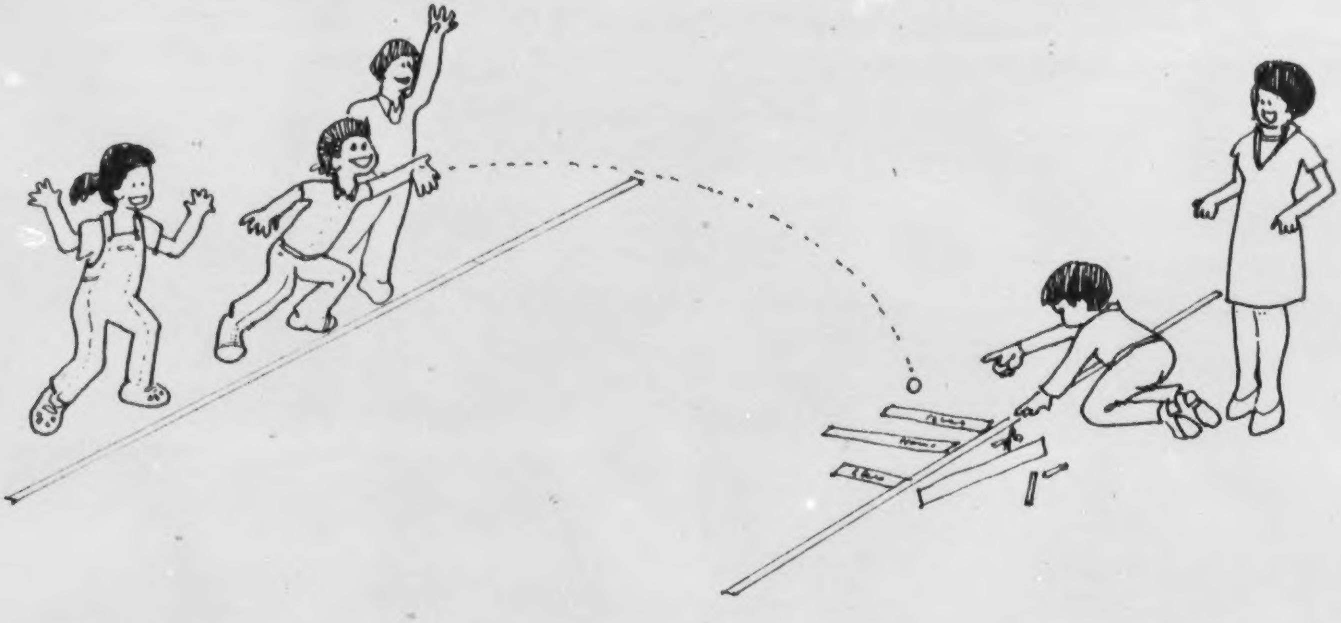
FIRST ACTIVITY FOR SKILL I	Invite the children to walk around the room in single file and to stop when you say Pare. Ask which two are closest to the door. ¿Cuál de los dos está más cerca? ¿Cómo pueden comprobar sus respuestas? Use a string to solve the problem. Repeat the activity using other points of reference.
SECOND ACTIVITY FOR SKILL I	Scatter several classroom objects on a table or on the floor. Ask the children to describe in relative terms, the distance from the objects to a point of reference that you select. Formulate questions that bring the children to realize the need for a point of reference so that the relative terms will have more meaning.
THIRD ACTIVITY FOR SKILL I	Stimulate the children to think of other ways of measuring, as for example, "Who is nearer to or farther from an object?" Provide the children with materials such as pointers, broomsticks, rods, etc., and let them measure how much nearer (or farther) one or another is from the point of reference, using broomsticks etc. as the unit of measure. For example: Carlos is standing a distance of five broomsticks away from the door. Carmen is standing a distance of two pointers from Carlos.

FOURTH ACTIVITY FOR SKILL I

Take the children outside to measure a plot of land of rectangular shape to simulate the job of a surveyor (the plot need not be large). Four children will be placed to mark the demarcation points which will form the rectangle. Ask other children to measure, using a string, the distance from one child to another. Tell them to compare the distance (the piece of string) that one child is from another. ¿Qué niño está más cerca de ____________________ (one of the children)? ¿Qué niño está más lejos de ______________________________ (the same child)? ¿Cuáles son las distancias más cortas? ¿Cuáles son las distancias más largas? The children may name other jobs related to measurements besides that of the surveyor.



FIFTH ACTIVITY FOR SKILL I	Mark on the floor two lines about four feet apart. Ask a child to jump from one line to the other, and have a classmate measure, with string, how close he came to the second line. Repeat the activity with several children. Identify the string of each child with his initials written on masking tape, and display the strings around the room.
SIXTH ACTIVITY FOR SKILL I	Take the class outside. Trace a straight line on the ground and mark a spot at a distance from the line. From that point the children will throw an object, attempting to reach the line. Ask each child to measure the distance to the line from the landing point with a strip of paper or string and to identify it with his name. (If the child cannot write yet, you do it). The child who has the shortest strip of paper is the winner.



UNIT 3: My Family

Skill A:	To make estimates of the physical dimensions of an object.
Skill B:	To identify changes that occur in people in relation to the passage of time.
Skill C:	To identify the movement of the wind as a force.
Skill D:	To describe how the wind makes some objects move.

SKILL A: Is able to make estimates of the physical dimensions of an object.

VOCABULARY:
ruler
compare
greater than
estimate
approximation

FIRST ACTIVITY FOR SKILL A

Chat with the children about common situations which demonstrate the convenience of making estimates. If mother wanted to place a lamp next to the sofa, how far away is the nearest electrical outlet from the lamp? Is the outlet close enough so that she does not need an extension cord? Other examples might be:

1. La mamá quiere colgar una cortina en la ventana de la sala. ¿Cómo sabe cuánta tela necesitará?

2. Vamos a forrar el canasto de los papeles. ¿Cuánto papel necesitaremos? ¿Cómo la sabemos?

Listen to the suggestions of the children; and if you think it convenient, write them down on the blackboard.

SECOND ACTIVITY FOR SKILL A

Ask the children to pretend that they have been invited to a birthday party and that they have bought a present. They have to wrap it so that it will look attractive. Mother offered the wrapping paper, but they have to tell her the exact quantity that they need. The estimate must be made very carefully since there is no paper to waste.

Give each team of children the materials necessary for the activity except the paper. Ask them to calculate the amount of paper that they will need. When they have figured out the amount of paper they will need, they will be able to ask for it. However, they will have to show you how they calculated it.

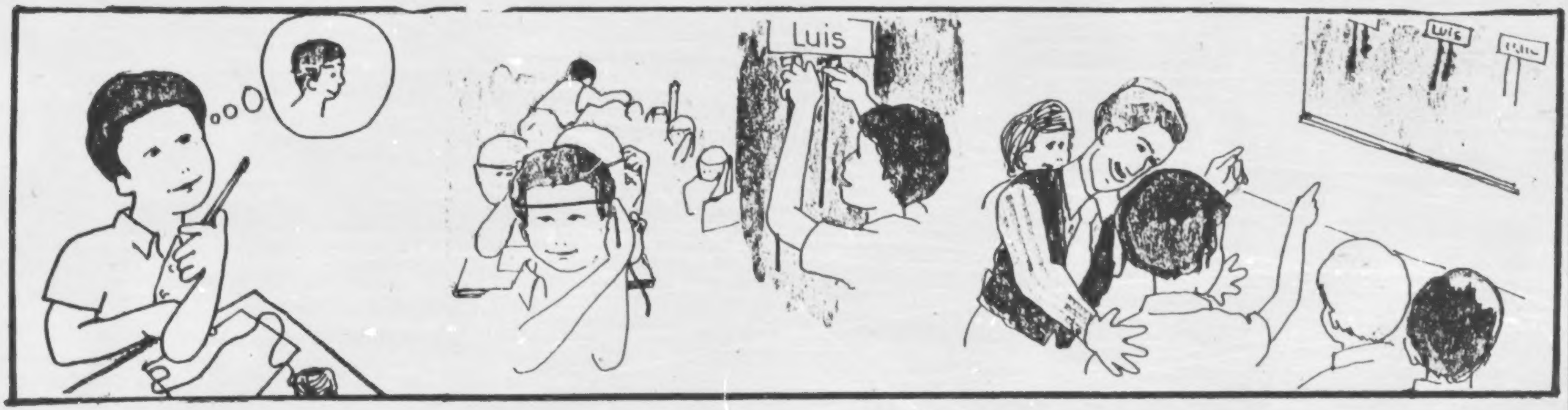
Give the children the required paper and help them wrap the present and seal it with scotch tape. Then ask them to estimate the amount of ribbon (or string) they need and cut it. Help them tie the package.

Gather the class together again and ask the various groups to describe how they did their estimates. Did the methods utilized by the various groups differ? Are they different from the ones suggested in the first activity?

THIRD ACTIVITY FOR SKILL A

Form several groups of children and ask them to estimate the distance around their heads by cutting a piece of string of the estimated length. Then, have them make a more precise measurement with another piece of string, perhaps of a different color. (Make sure that they measure their heads just above their ears and eyes). Invite them to compare the lengths of their strings to see which group has the best "estimaters." The pieces of string can be used to answer questions such as: ¿Qué tamaño de cabeza parece ser el más común? ¿Cuál es la más grande? ¿Cuál es la más pequeña? ¿Hay alguna diferencia entre el tamaño de la cabeza de los niños y el tamaño de la cabeza de las niñas?

Identify with the name of the child each piece of string used to measure head size. If you stick those pieces of string on a straight line drawn on the blackboard from the shortest to the longest, you will have a graphic representation of the head sizes. You will be able to use them to make visual comparisons.



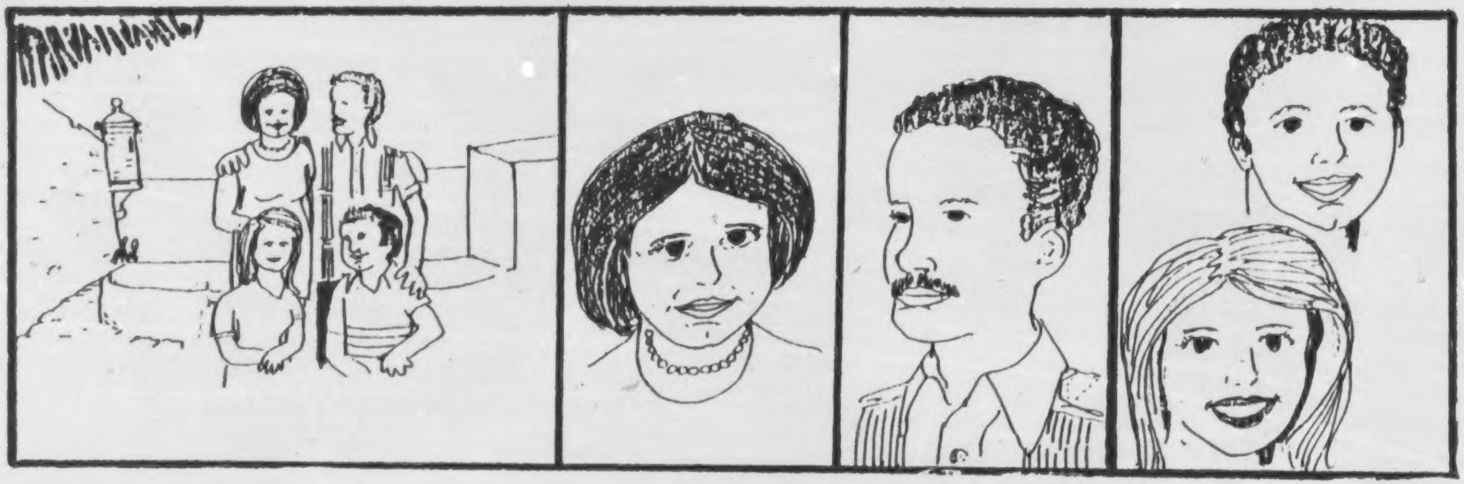
Some children will probably want to do additional "research" measuring the head size of other children and adults.

SKILL B: Is able to identify changes that occur in people in relation to the passage of time.

VOCABULARY:
young, younger, youngest
old, older, oldest

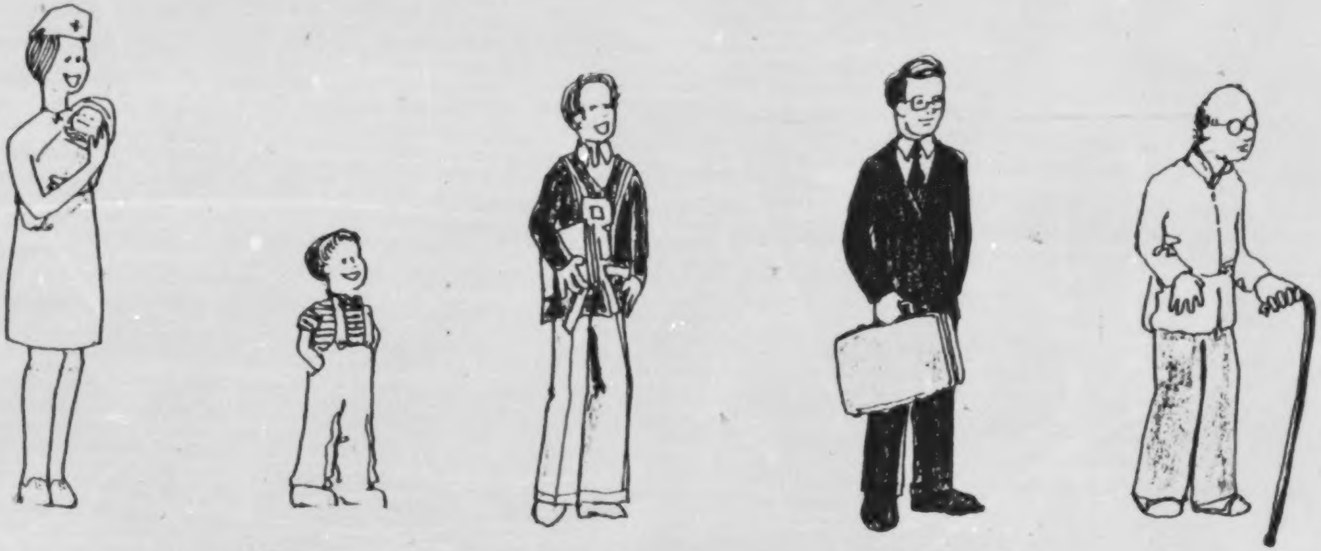
FIRST ACTIVITY FOR SKILL B

Show pictures in which a father or a mother (or both) is seen with their children. Ask, for example: ¿Cuál es la mamá (or, el papá, as the case may be)? ¿Cómo lo sabes? ¿Se parece la mamá (el papá) a su hijo? ¿Qué diferencias hay entre ellos? ¿Cuál es el más joven?



SECOND ACTIVITY FOR SKILL B

Show a series of pictures of a person at different ages (baby, child, youth, middle age and old age). Ask the children to point out the oldest person. Ask, for example: ¿ Sabemos que una person es mayor? ¿Qué cosas nos indican que una persona es ya mayor? Have them indicate the youngest person. ¿Qué cosas en el cuerpo de esa persona indican que es joven? ¿Qué otras cosas en la manera de ser de una persona nos indican que es joven?



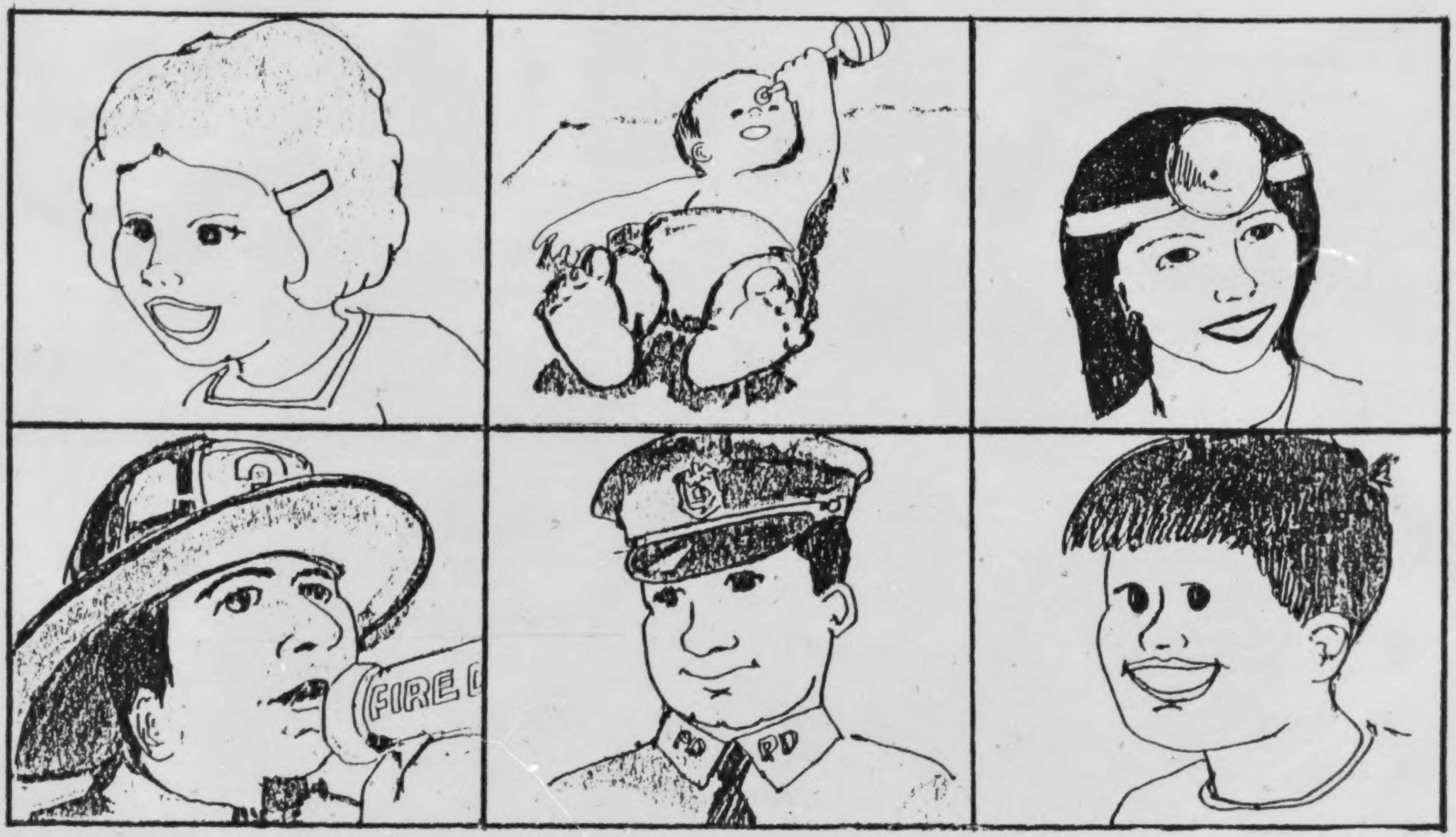
THIRD ACTIVITY FOR SKILL B

The children will bring photographs or will draw pictures of the members of their families. They will indicate who is the youngest and who is the oldest. Ask: ¿Eres tú joven o viejo? ¿Por qué? ¿Es tu papá joven o es una persona mayor? ¿Por qué? ¿Cómo era tu papá cuando era bebé? ¿Cómo es ahora? ¿Cómo serás tú cuando estés en cuarto grado?

FOURTH
ACTIVITY
FOR
SKILL B

Show pictures of different people. The children will group them in two categories:

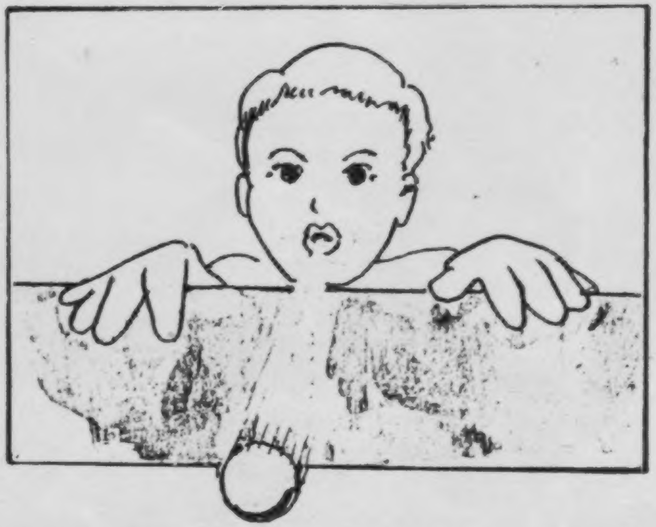
Adultos o Niños



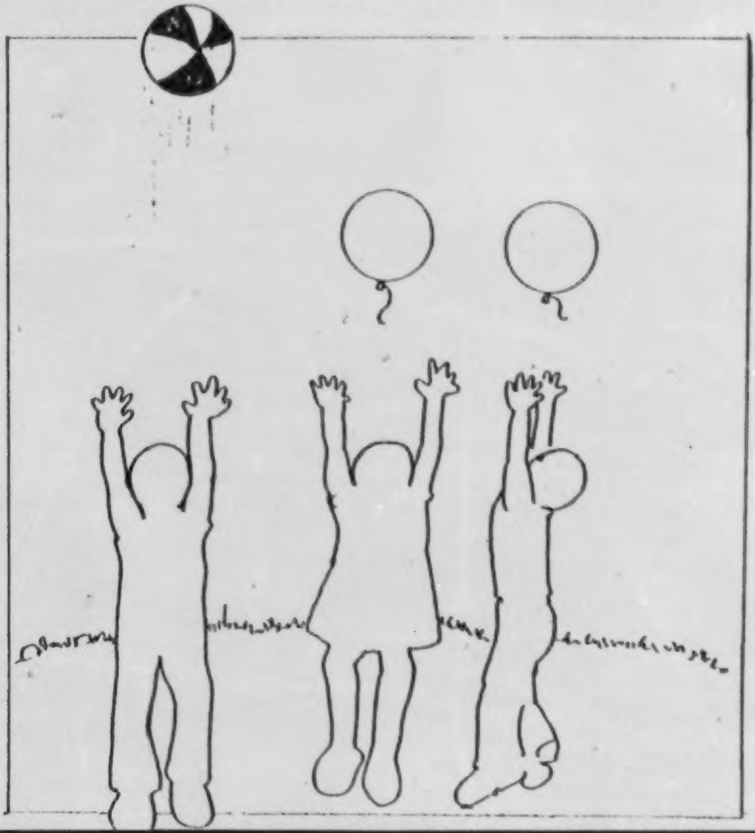
SKILL C:	Is able to identify the movement of the wind as a force.
SKILL D:	Is able to describe how the wind makes some objects move.

VOCABULARY: wind
force

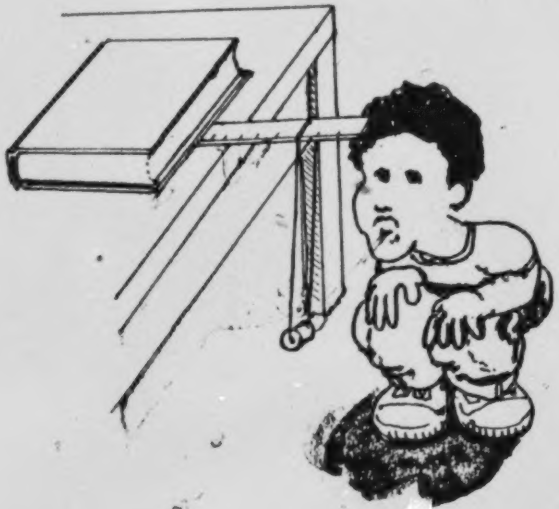
FIRST ACTIVITY FOR SKILL C	Invite the children to participate in the game, El poder del viento. Draw a line at one end of a table. Divide the class into several teams and ask each team to try to blow a piece of paper or other light object (e.g. a ping-pong ball) from one end of the table to the other. The group that makes the object reach the finish line first wins.



SECOND ACTIVITY FOR SKILL C	Initiate a conversation with the children about the above activity by asking, for example: ¿Por qué tú crees que el objeto pudo moverse? (El viento ejerce fuerza.) ¿Cómo los miembros de tu familia hacen uso de la energía del viento? Let the children express themselves about how the wind might affect their own activities and those of their mothers and fathers.
THIRD ACTIVITY FOR SKILL C	Give a big ball to one child and some inflated balloons to others. Let the children toss the ball and the inflated balloons into the air to move them. Stimulate the children to describe what they did so that the ball and the balloons would move. Now place the inflated balloons and the ball on a table where there are no air currents. Ask the children: ¿Cómo podemos mover estos objetos sin tocarlos? Let them carry out the methods they suggest. The students will discover that they can move the balloons by blowing it or fanning it with a piece of cardboard. ¿Qué hizo mover los globos y la bola?



FOURTH ACTIVITY FOR SKILL C	Tell the children to tie an empty thread spool (or other light object) to a string. Suspend it so that it swings freely. Ask if someone can move it without touching it. You may suggest that they try blowing it with their mouths or with a fan. ¿Qué mueve el carrete?

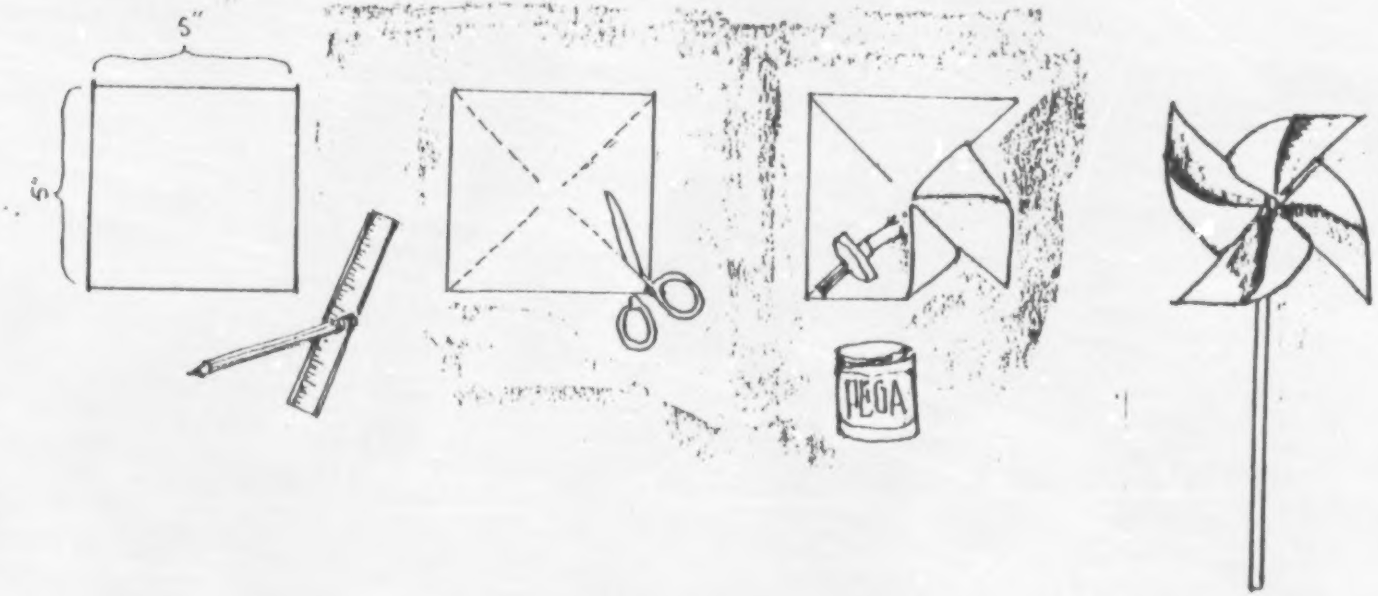


FIFTH ACTIVITY FOR SKILL C

Help the children to make a paper windmill or pinwheel according to the following instructions:

1. Cut a paper square.
2. Cut the square from the corners to the center.
3. Fold the corners so that the corner points touch the center point.
4. Glue these points one on top of the other.
5. Attach the windmill or pinwheel to a pencil using a pin or a tack. (This should be done by the teacher to avoid accidents with the pins or tacks).

The children may observe the movement of the paper windmill as they walk or run. ¿Cuándo se mueve más rápido, cuando se camina o cuando se corre?

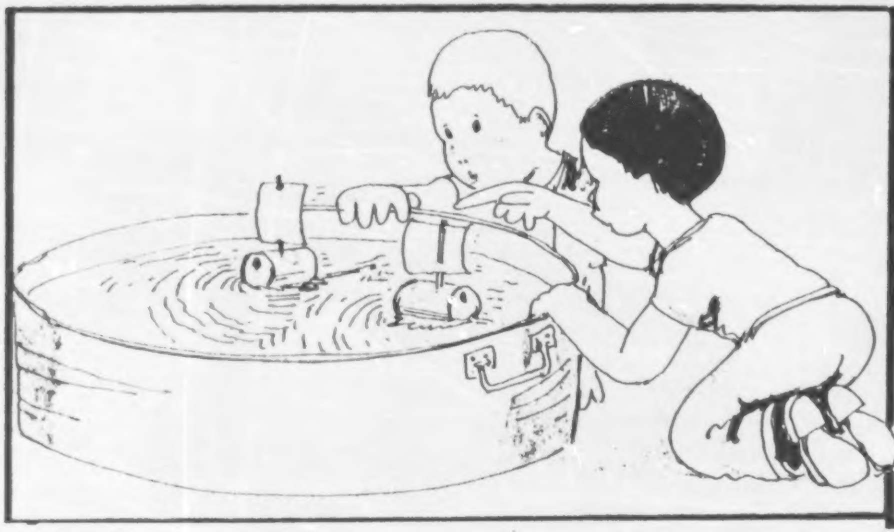


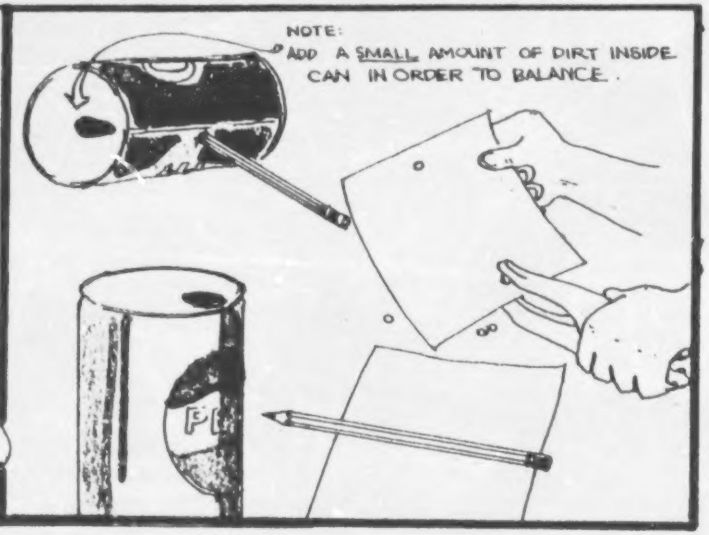
FIRST ACTIVITY FOR SKILL D

Stimulate the children to experiment with air in motion. Give some ltttle flags to some children and to others some inflated balloons tied with string, for them to expose to the air. Do they realize that wind and air in motion are the same?

SECOND ACTIVITY FOR SKILL D

Let the children make sailboats utilizing bottle corks or other objects which the children may suggest. Let the children place the boats in a basin or other container of water and blow them to make them move. Then have them describe what they did. ¿Qué hizo moverse los botes? ¿Fue el viento o fueron los corrientes del agua?





NOTE:
ADD A SMALL AMOUNT OF DIRT INSIDE CAN IN ORDER TO BALANCE.

THIRD ACTIVITY FOR SKILL D	The students will draw pictures (or identify pictures) of how the members of their family make use of the energy of the wind to move objects.

Examples:

- Children flying kites.
- Toys that use the wind.
- Sailboats.
- Clothes drying in the wind.
- Bicycles going with the wind and against the wind.

UNIT 4: My Home

Skill A: To identify changes in the state of various solids.

Skill B: To predict what will happen to some solids when heat is applied.

Skill C: To demonstrate how water will change to a gas when heated.

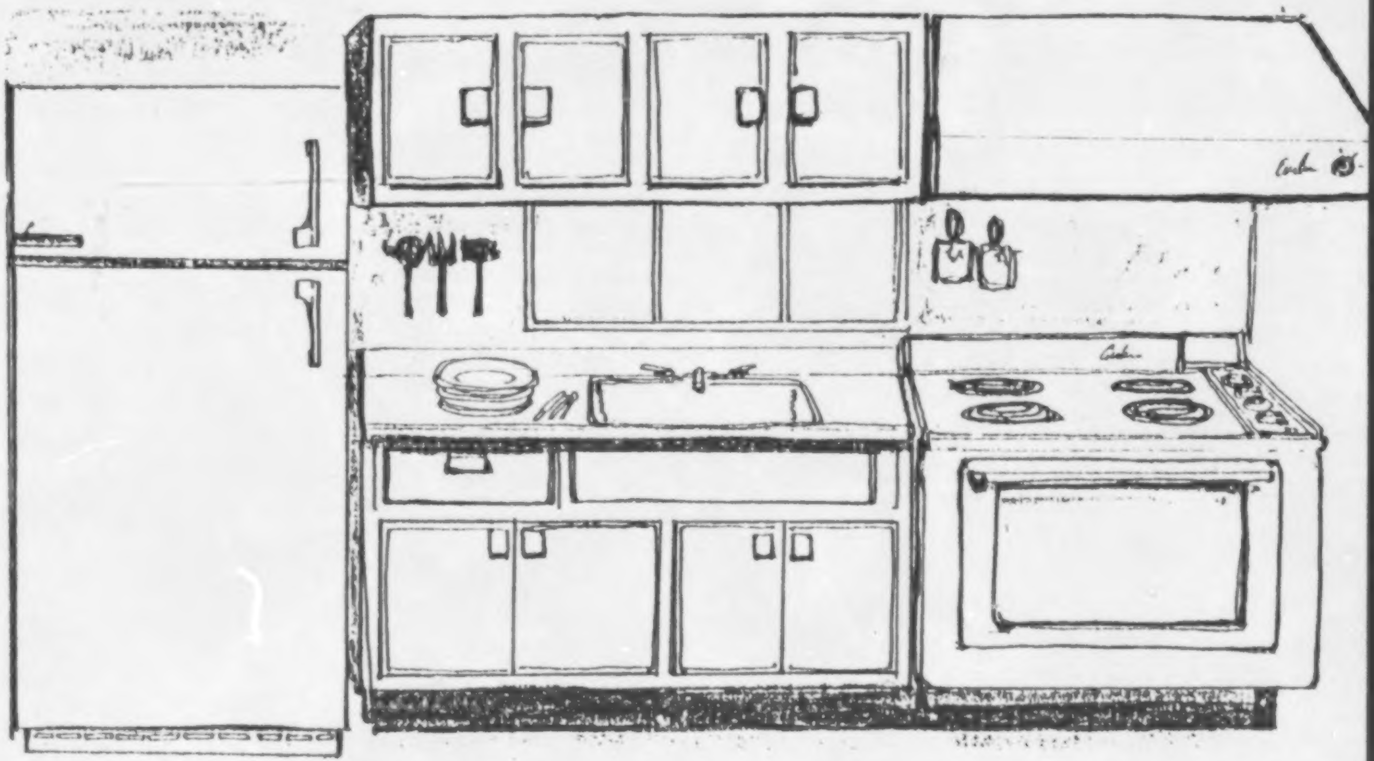
SKILL A: Is able to identify changes in the state of various solids.

SKILL B: Is able to predict what will happen to some solids when heat is applied to them.

VOCABULARY:
solid
liquid
melt
heat

FIRST ACTIVITY FOR SKILL A

Show pictures of houses and their different rooms. Have the children identify each one of them. Show pictures of a kitchen and have them identify the things found there, such as: stove, refrigerator, dishes, etc. Then ask: ¿Para qué se usa la nevera? ¿Tiene la nevera en tu casa un compartamento congelador? ¿Para qué se usa eso? ¿Qué ocurre cuando se saca helado o cubitos de hielo del congelador? Make certain that the children realize that when ice is removed from the freezer it changes from a solid to a liquid.



SECOND ACTIVITY FOR SKILL A	Show a popsicle or a piece of ice and ask the class to indicate whether it is solid or liquid. Ask, for example: ¿En dónde se colocó para que se congelara? ¿En qué estado estaba antes de congelarse? ¿Qué necesita un líquido para congelarse? ¿Se quedará ahora así como está o podrá cambiar otra vez? ¿Cómo?
THIRD ACTIVITY FOR SKILL A	Give each child a piece of chocolate. Ask them to hold it in their hands. Their hands should be completely closed, but they should not squeeze them. When everyone has his/her piece of chocolate, sing a song, while everyone keeps his/her hands closed. Ask them to predict what is going to happen when they open their hands. Now ask them to prove their predictions. ¿Qué le ocurrió al chocolate? ¿Cómo era cuando lo pusiste en tu mano? ¿Cómo está ahora? ¿Qué hizo que cambiara? (The heat from the student's body melted the chocolate.)
FIRST ACTIVITY FOR SKILL B	Place ice cubes in different places in the classroom. Place one where it receives direct sunlight. Ask the children to predict what will happen to the ice cubes. Let them observe them for a few minutes. Discuss the results.

SECOND ACTIVITY FOR SKILL B

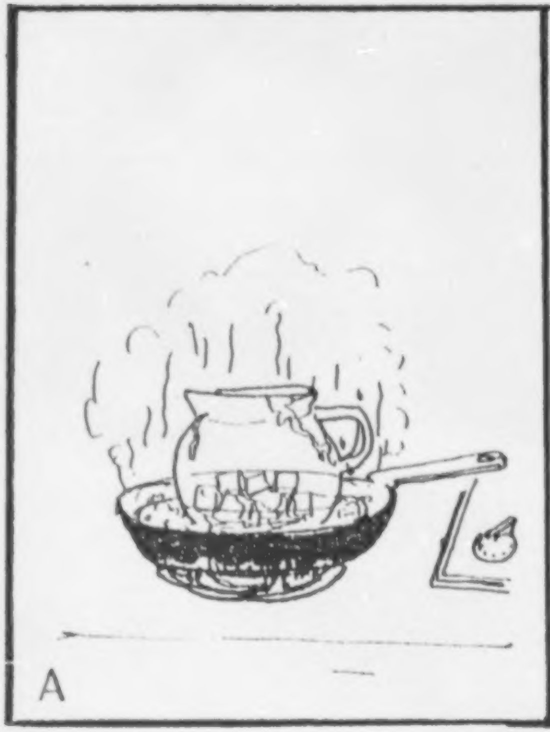
Show three illustrations of ice cubes:

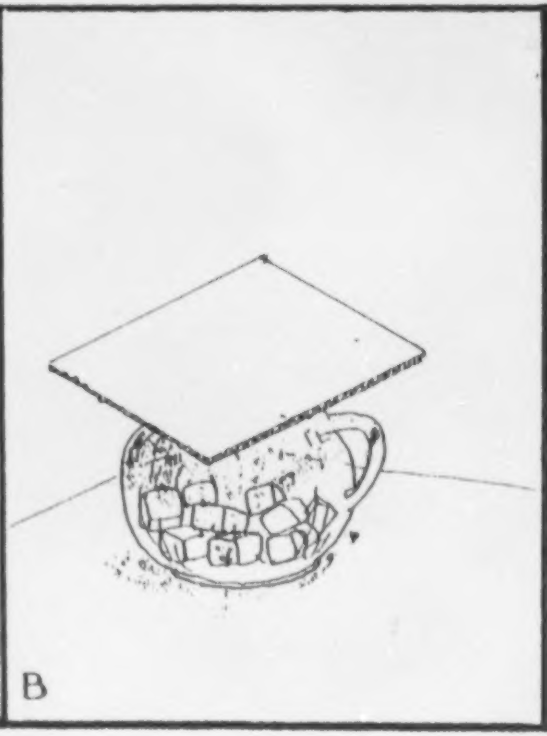
A. A pitcher with ice in a pan of water on top of a stove.

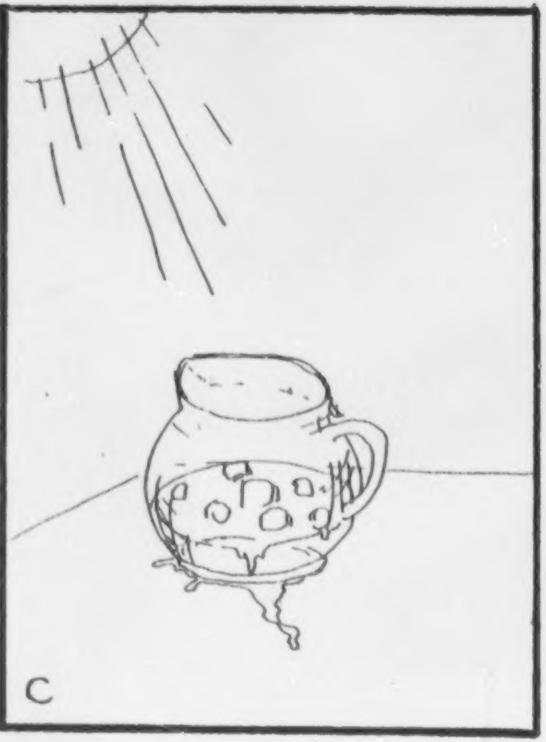
B. A pitcher with ice covered with cardboard, for example, to give it shade.

C. A pitcher with ice exposed to the sun.

Then ask, for example: ¿Qué es diferente en cada vasija? Haz una predicción: ¿Cuál cambiará primero? ¿Cuál cambiará después? Prueba tu predicción.

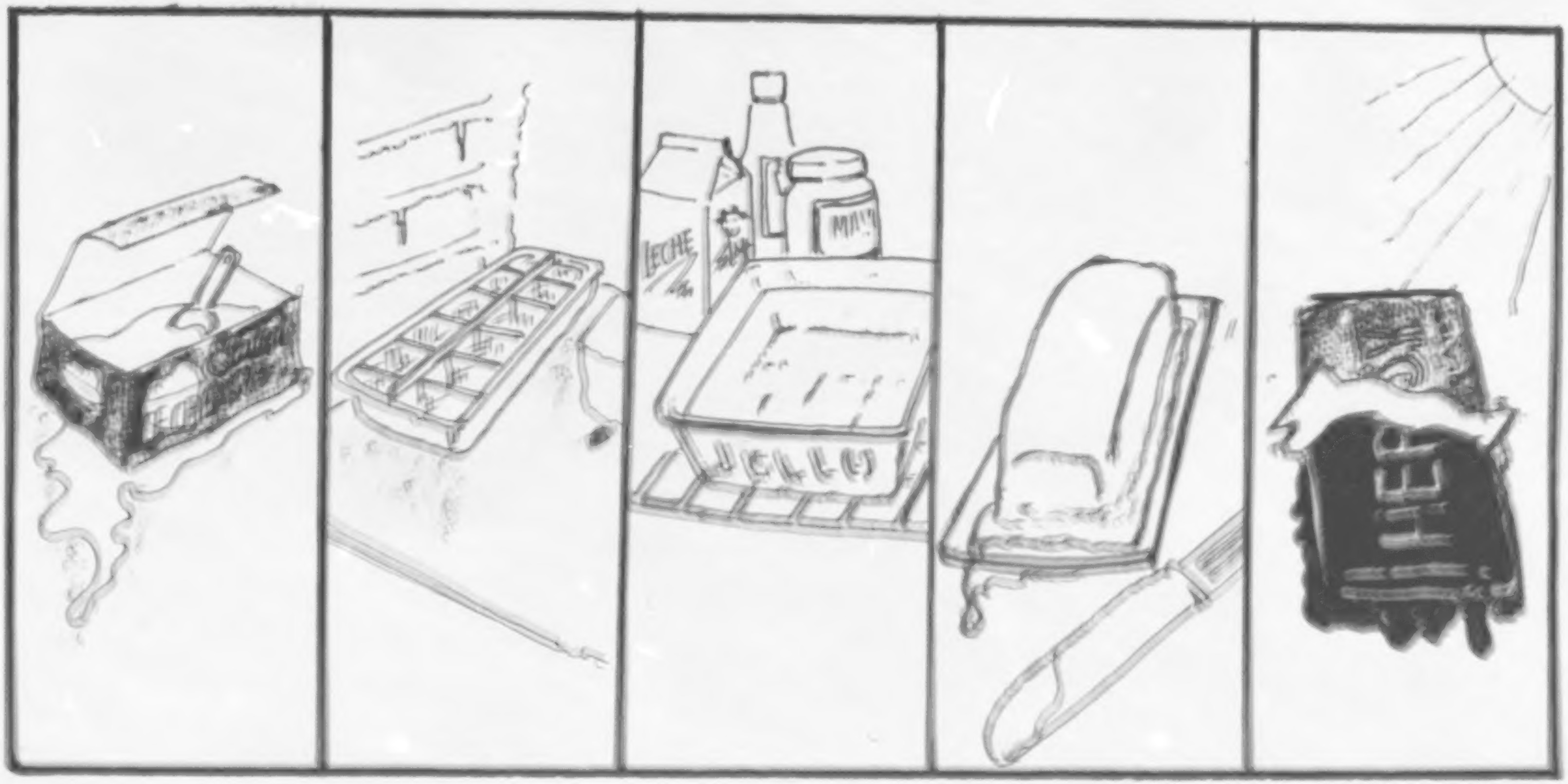






THIRD ACTIVITY FOR SKILL B

Show pictures of ice cream, ice, Jello, chocolate candy and butter in various locations. Have the children mark with an X the ones in a group of illustrations that represent the change from solid to liquid.

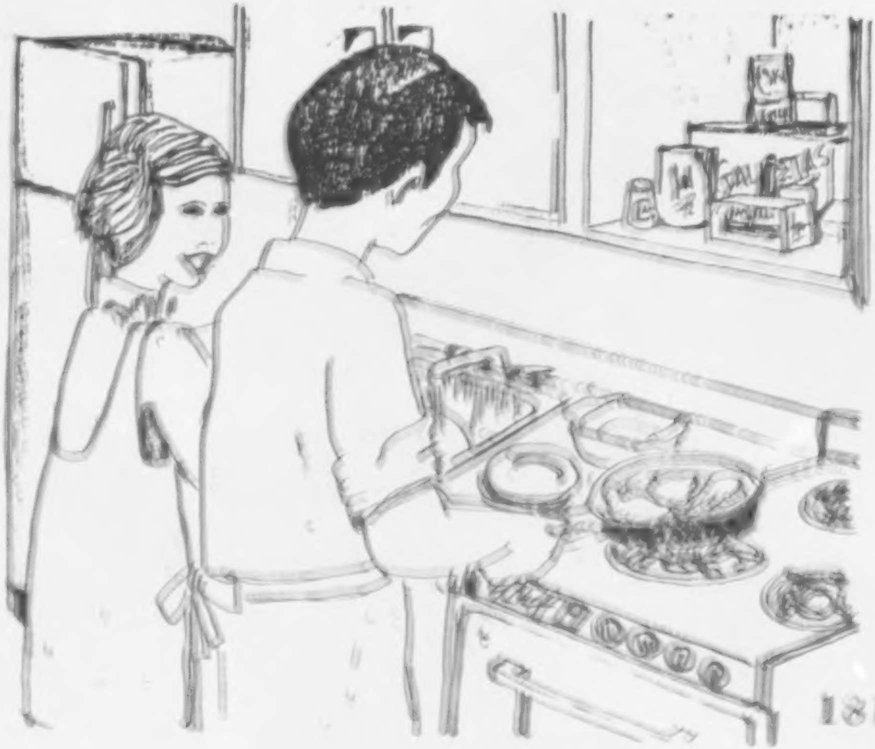


SKILL C:	Is able to demonstrate how water will change to a gas when heated.
SKILL D:	Is able to demonstrate how water vapor can change to water when cooled.

VOCABULARY: evaporate, evaporation condense, condensation

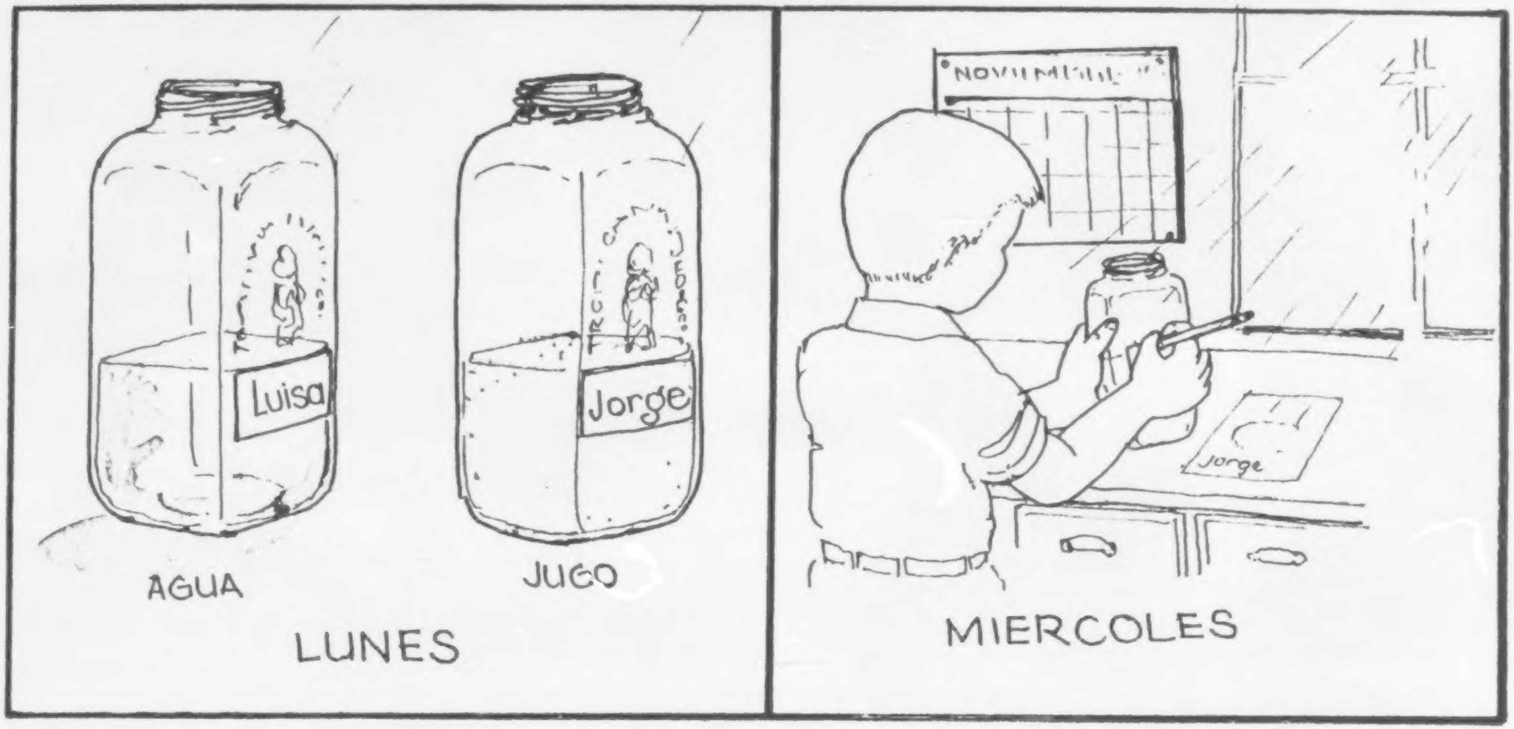
FIRST ACTIVITY FOR SKILL C

Show pictures of mothers and fathers working in the kitchen (cooking, washing dishes, etc.). ¿Qué hace la mamá? Have the children identify the objects and/or substances used in the kitchen as solids or liquids, depending on the situation. You may ask, for example: ¿Qué necesita la mamá para cocinar? (Alimentos, estufa, etc.). ¿Qué les hace el calor a los alimentos? (Cocinarlos). ¿Qué le sucede al agua cuando se le aplica calor? ¿Y cuando empieza a hervir? Let the students express themselves.



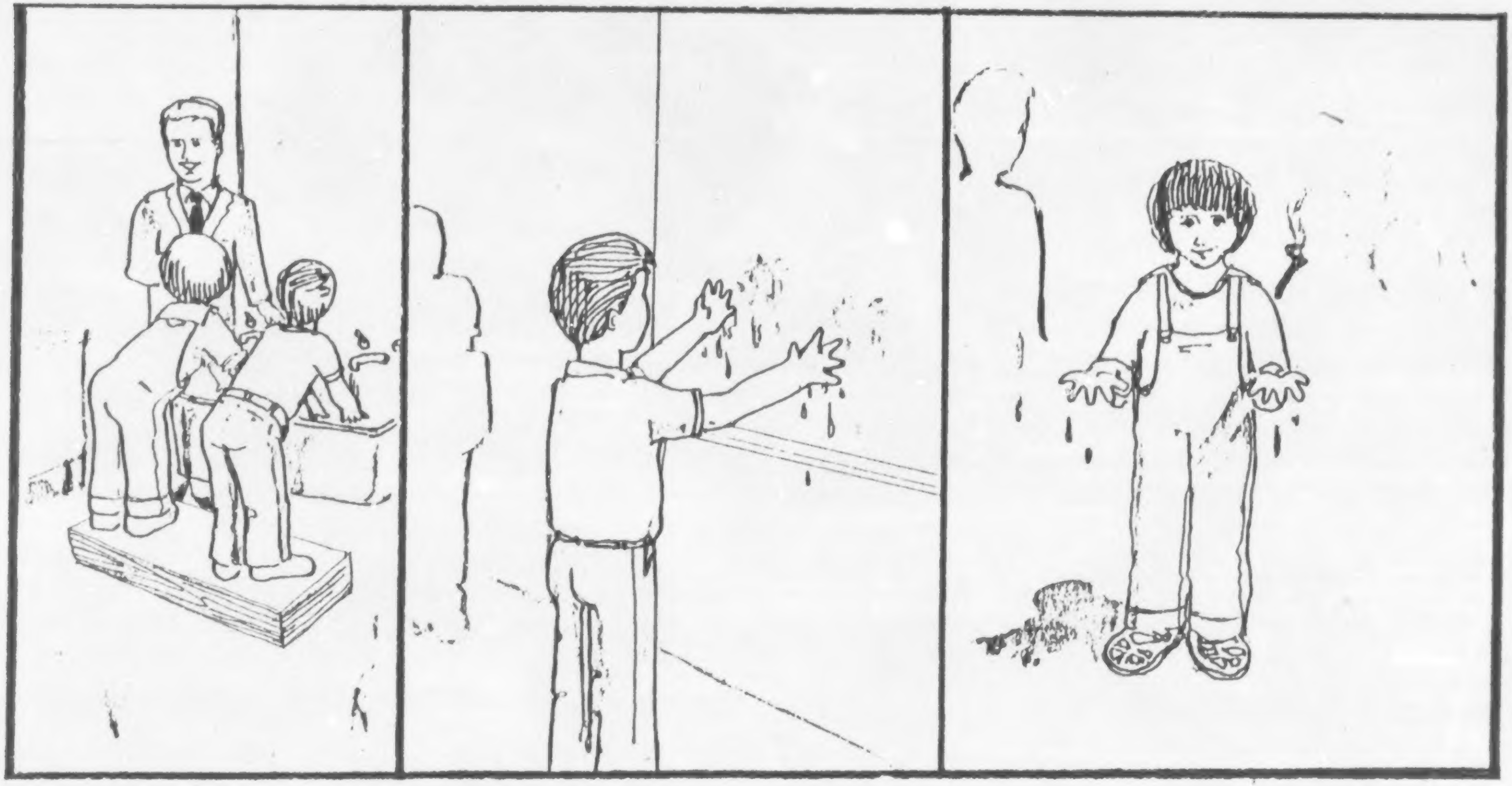
SECOND ACTIVITY FOR SKILL C

Form groups of several students. Distribute two containers to each group. In one will be a little water (less than half the capacity of the container) and in the other the same quantity of any other liquid (juice, ink, soft drink, etc.). Ask the students to identify the containers with their names and to mark the level of the liquid contained in them. Expose the containers to the sun or some place in the classroom where they will receive more heat. Leave them for three days. Then the children will mark the level of the liquids. Encourage the student, however, to check every day to see whether there has been any change in the level of the liquids. ¿Qué ha pasado? Since it is necessary to wait three days to obtain the results, go on with another activity and discuss the results of this one later.



THIRD ACTIVITY FOR SKILL C

Present a container of water and ask two students to submerge their hands in the water. Tell them to make an imprint of both hands on the blackboard. The students will observe for several minutes. Ask: ¿Qué sucede con las huellas? (Se secan). Ask another child to wet his hands, to wave them in the air, and then to explain what happens. Another child can moisten a piece of paper and bring it close to a lighted light bulb or expose it to the sun for awhile. The student will explain what has happened. Repeat the question: ¿Qué sucede? ¿Por qué ocurre eso? Explain to the class that this process is called evaporation.



FIRST ACTIVITY FOR SKILL D

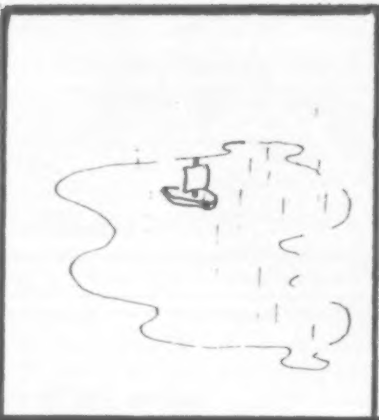
In a thermos, bring water that has boiled. Or, if you have the facilities at hand, you may boil water in the classroom. Show the class a plate or a pan lid that is completely dry and ask them to observe carefully. Expose the plate to the water vapor which is coming out of the thermos or the container in which the water has been heated. Keep it in this position for a few seconds. Then show it to the group and ask: ¿Qué le ocurrió al plato? ¿De dónde salió esa agua? Invite the children to find explanations as to what occurs. (When the thermos is uncorked the water vapor escapes. Since the plate is cold, the water in gas form cools and becomes liquid again.)

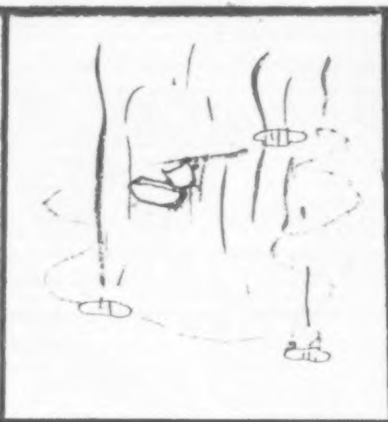
SECOND ACTIVITY FOR SKILL D

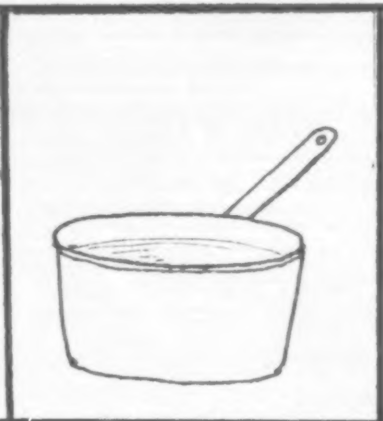
Show an empty glass or bottle. Ask the class to observe it carefully and to describe it. ¿Está húmedo? Pour some very cold water (or other liquid) into it, being careful not to spill any on the outside of the glass, and ask them to observe carefully the outside of the glass. Ask a child to touch it. ¿Está seco como antes? Al echarle agua, ¿se derramó alguna? ¿Está roto el envase? ¿puede pasar el agua a través de él? Entonces, ¿de dónde sale el agua que está en la parte afuera del envase? The children should realize that the water vapor in the air became cooled when it came into contact with the cold surface of the bottle. Thus it condensed into water.

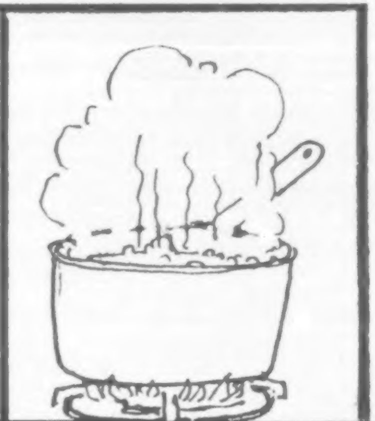
THIRD ACTIVITY FOR SKILL D

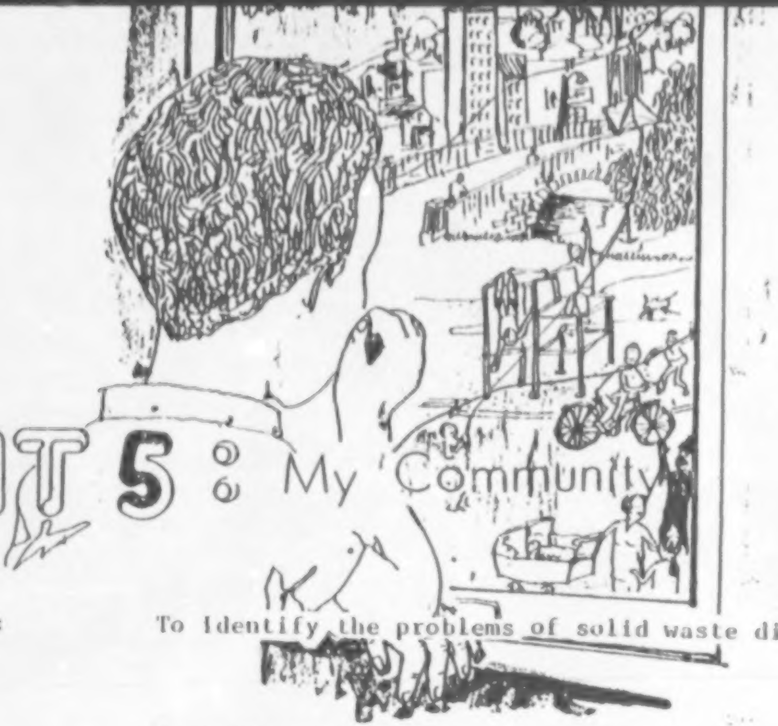
Have the children mark with an X the illustration that represents the change from liquid to gas.











UNIT 5: My Community

Skill A: To identify the problems of solid waste disposal.

Skill B: To indicate the ways in which people can help improve the environment at home as well as at school.

Skill C: To describe substances in terms of their states: solid, liquid and gas.

Skill D: To infer whether an object is living or non-living by its observable characteristics.

Skill E: To recognize and identify the wheel, the inclined plane and the lever as simple machines.

Skill F: To describe the movement of falling objects in terms of a downward-pull.

SKILL A: Is able to identify the problems of solid waste disposal.

SKILL B: Is able to indicate the ways in which people can help improve the environment at home as well as at school.

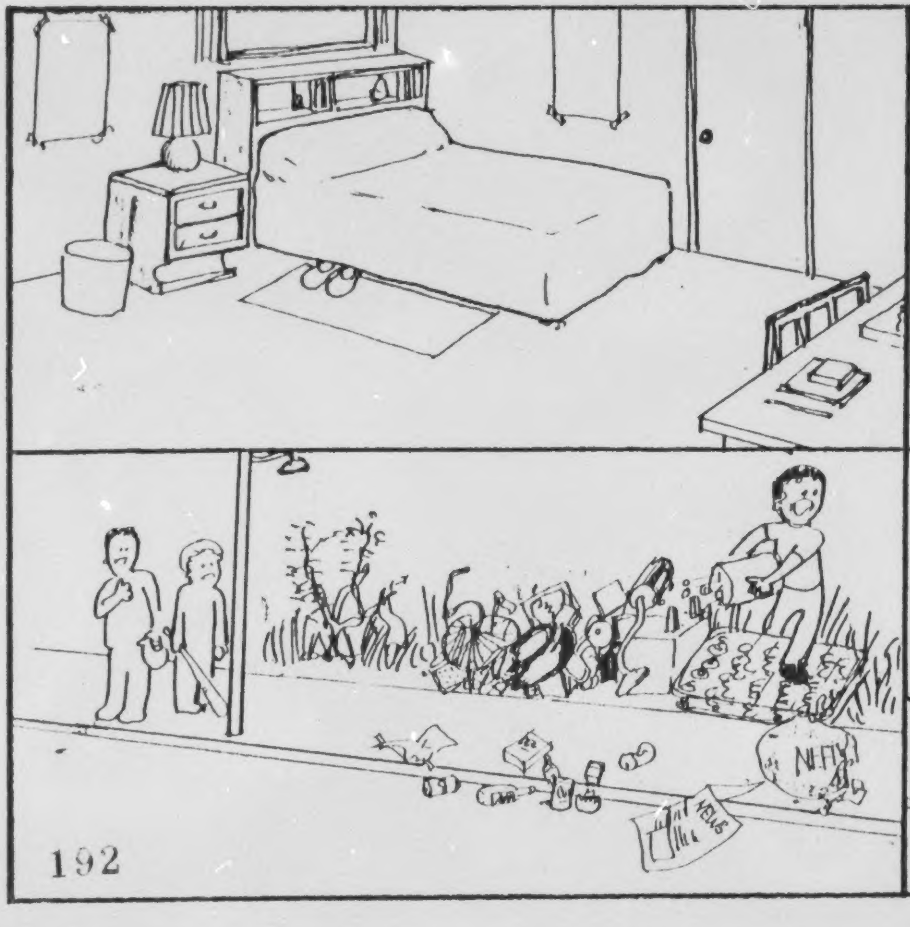
VOCABULARY:
trash
litter
solid waste
environment
pollution

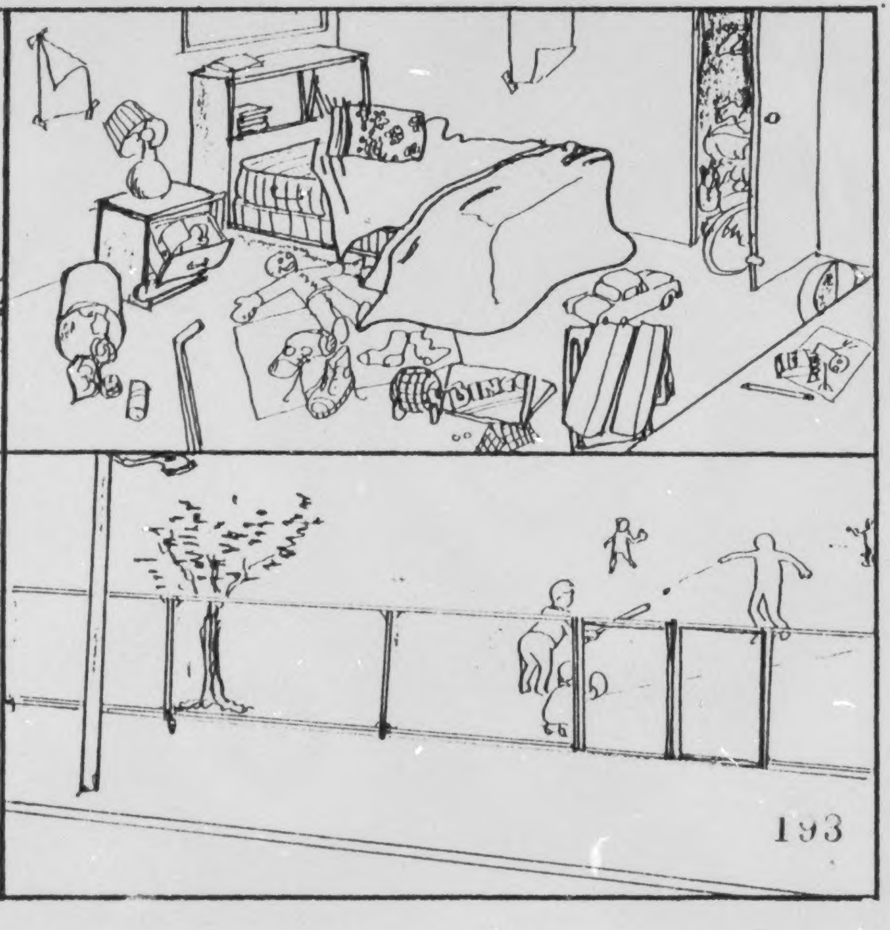
FIRST ACTIVITY FOR SKILL A

Take the group outside for a walk around the school yard and surrounding area. Ask the students to count and name all the things which they consider trash or litter that they see during the walk on the sidewalk, along the sides of the street, in front of houses, etc. ¿Cuántos objetos contaste como basura? ¿Cuántos contó_________________________? When you return to the classroom, stimulate the students to share their discoveries with their classmates.

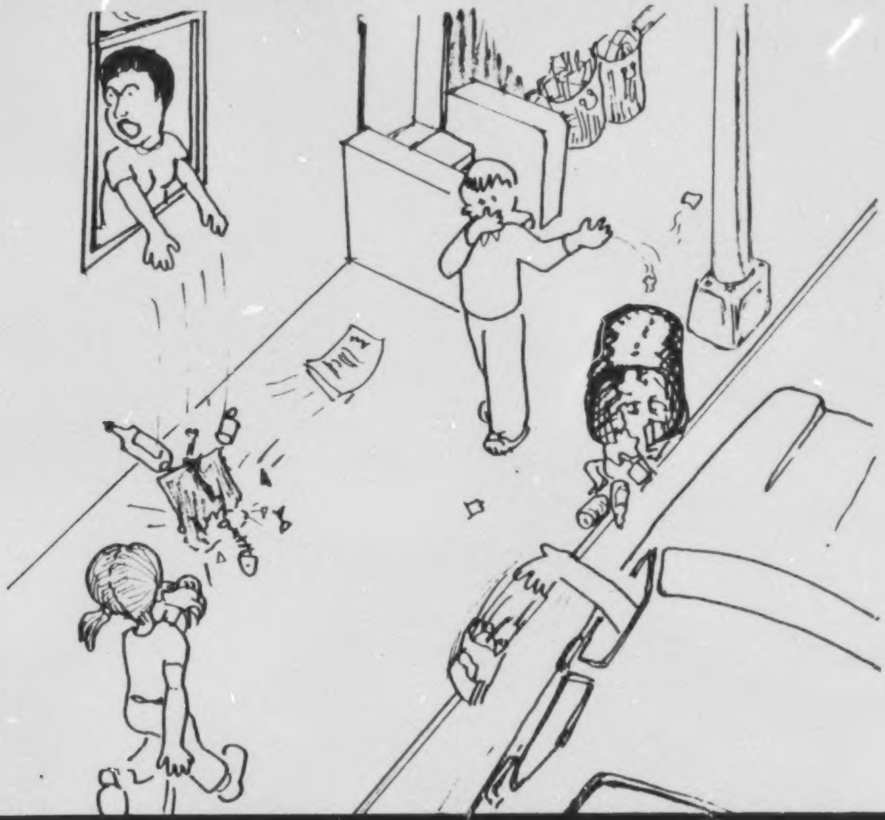
SECOND ACTIVITY FOR SKILL A

Show illustrations of littered and clean environments. Ask questions such as: ¿Qué presentan estas ilustraciones? ¿Cuál te gusta más? ¿Por qué? ¿Cuál es la diferencia entre las ilustraciones? ¿Qué hay en ellas que no te gusta? ¿Por qué está la basura ahí y no en los zafacones? ¿Cómo se verían estos sitios con más basura? ¿Con menos basura? ¿Sin basura? ¿Se parece éste a algún sitio que tú conoces? ¿Dónde está ese sitio?





THIRD ACTIVITY FOR SKILL A	Give each child a large paper bag. The group will go out for another walk around the school yard. They will put in the bags all the papers and other kinds of solid wastes they find on the walk. They will count and identify the contents. You may ask, for example: ¿Por qué hemos encontrado esa basura? ¿Dónde debería estar? ¿Qué puedes hacer? Ask them to suggest ways of disposing the trash. Indicate to them that they should go wash their hands with soap and water now. Ask them why they should do so.
FOURTH ACTIVITY FOR SKILL A	Show pictures or photographs of people throwing away solid waste material in the street. ¿Cómo te sientes cuando pasa esto? ¿Has visto a alguien causando daño al ambiente de esta forma? ¿Por qué lo hacen? ¿Sucede esto en tu casa? ¿En la escuela? ¿Qué puedes hacer?



FIRST ACTIVITY FOR SKILL B	Ask each student to tell the group where he plays when he is away from school. Make a list of the play areas mentioned. Afterwards, have the children classify them in categories, such as: the yards of their houses, sidewalks, streets, parks, vacant lots, etc. Ask each student to describe the area where he plays: ¿Cómo es? ¿Hay basura? ¿Es éste un sitio seguro para jugar? ¿Qué podemos hacer para mejorar el problema de la basura? Urge them to offer suggestions and to try some of them out.
SECOND ACTIVITY FOR SKILL B	Ask each child to count daily the number of trash cans that are filled up every day in his house. For a week, keep a record on the blackboard using a square of white paper or a picture of a trash can for each trash can reported by each student. Stick the pictures on the blackboard and label them according to the days of the week. Use the same procedure to illustrate the number of waste baskets filled in the classroom. At the end of the week, count the pictures that have accumulated during the week. ¿Cuánta basura hemos producido? ¿Dónde se llenaron más zafacones? ¿En la casa o en este salón? ¿Por qué?
THIRD ACTIVITY FOR SKILL B	Prepare with the students a dramatization of a birthday party, in which are represented the father, the mother, the children and the guests. The parts may be voluntary or assigned by the teacher. Through discussions the students will be brought to analyze the situation in terms of what each participant does before and after the party: ¿Qué preparativos se hicieron para el cumpleaños? ¿Se ubicaron suficientes zafacones? ¿Qué podríamos hacer con los desperdicios? ¿Qué harías tú? Let the children defend their possible solutions in terms of the benefits to be derived from them.

SKILL C: Is able to describe substances in terms of their state:

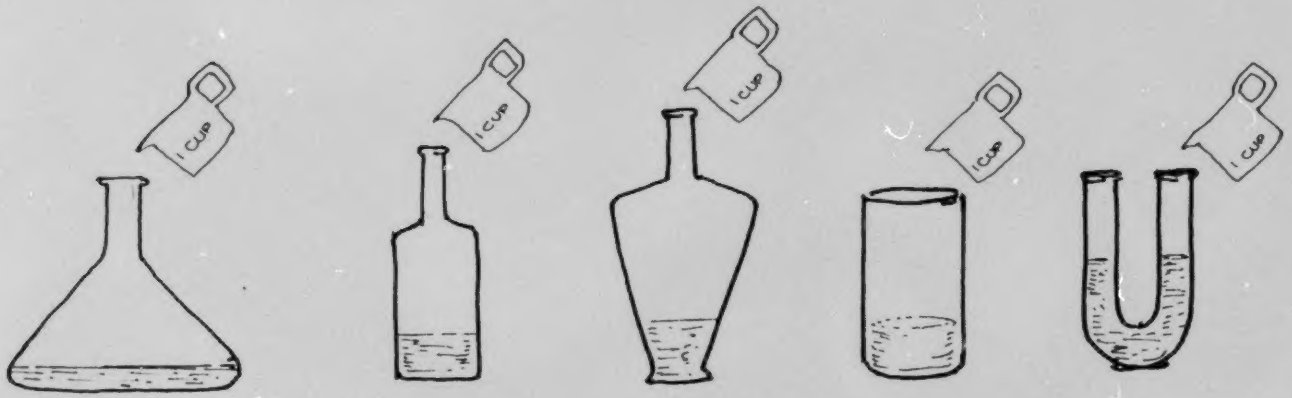
- a. solid
- b. liquid
- c. gas

VOCABULARY:

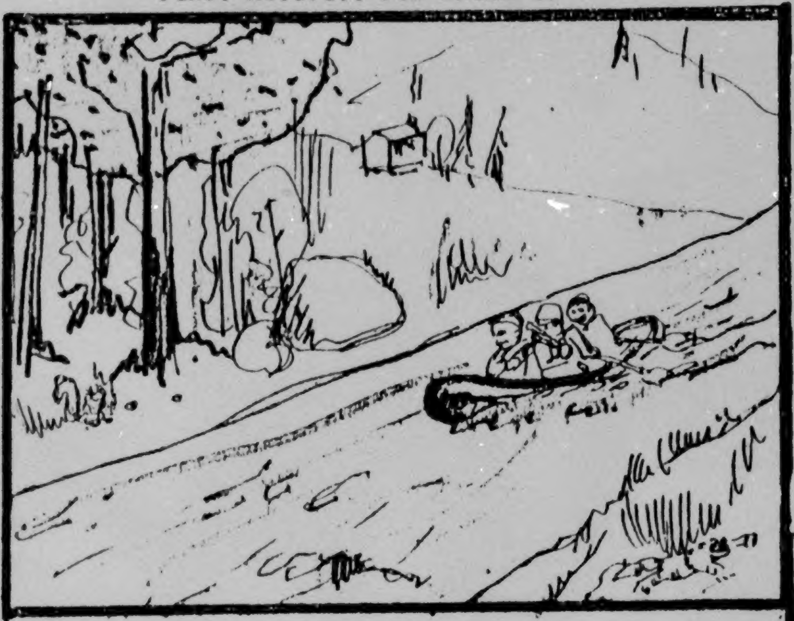
solid
liquid
gaseous
freeze
rivers
lakes
evaporation

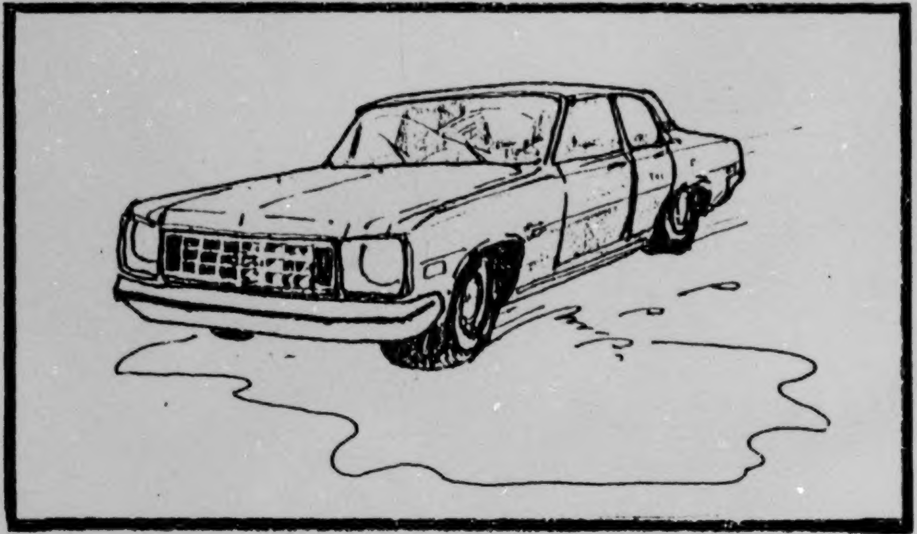
FIRST ACTIVITY FOR SKILL C

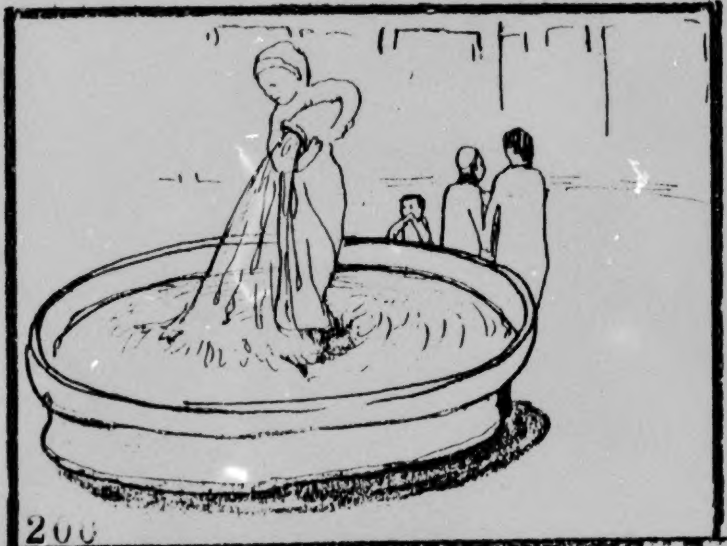
Through photographs, etc., have the children observe bodies of water in and around their community. Discuss these with the children, whether they are rivers, lakes, etc. What states are these bodies of water in? Point out to the children that liquids take the shape of the container which they are in. There could be large or small bodies of water depending on the surrounding land. Stress this with water and glass containers of different shapes.

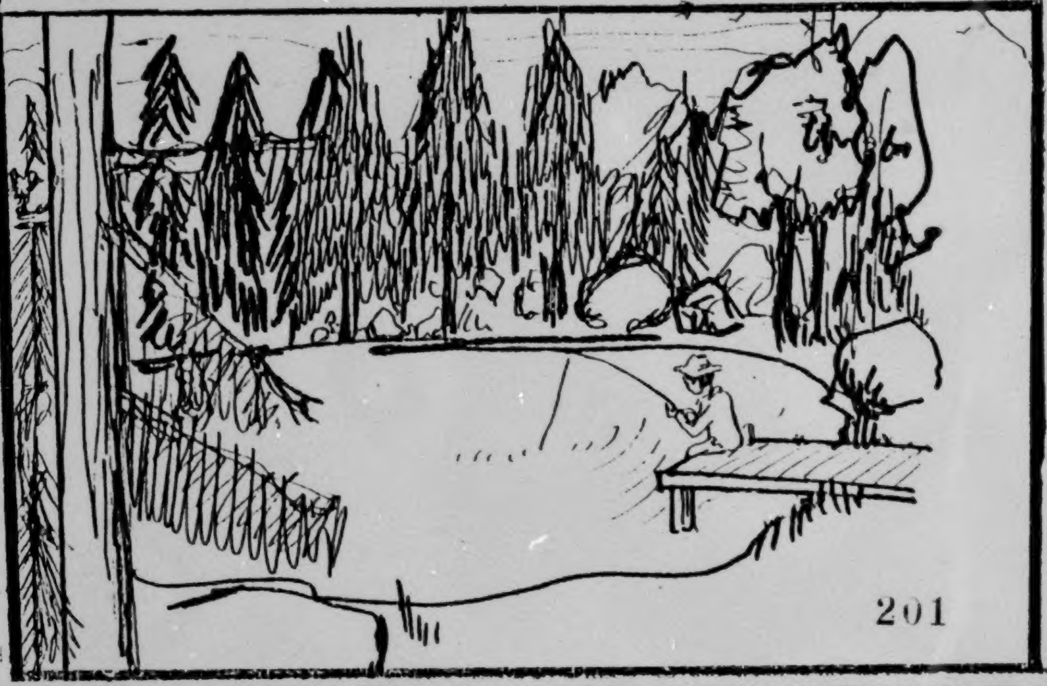


FIRST ACTIVITY FOR SKILL C:







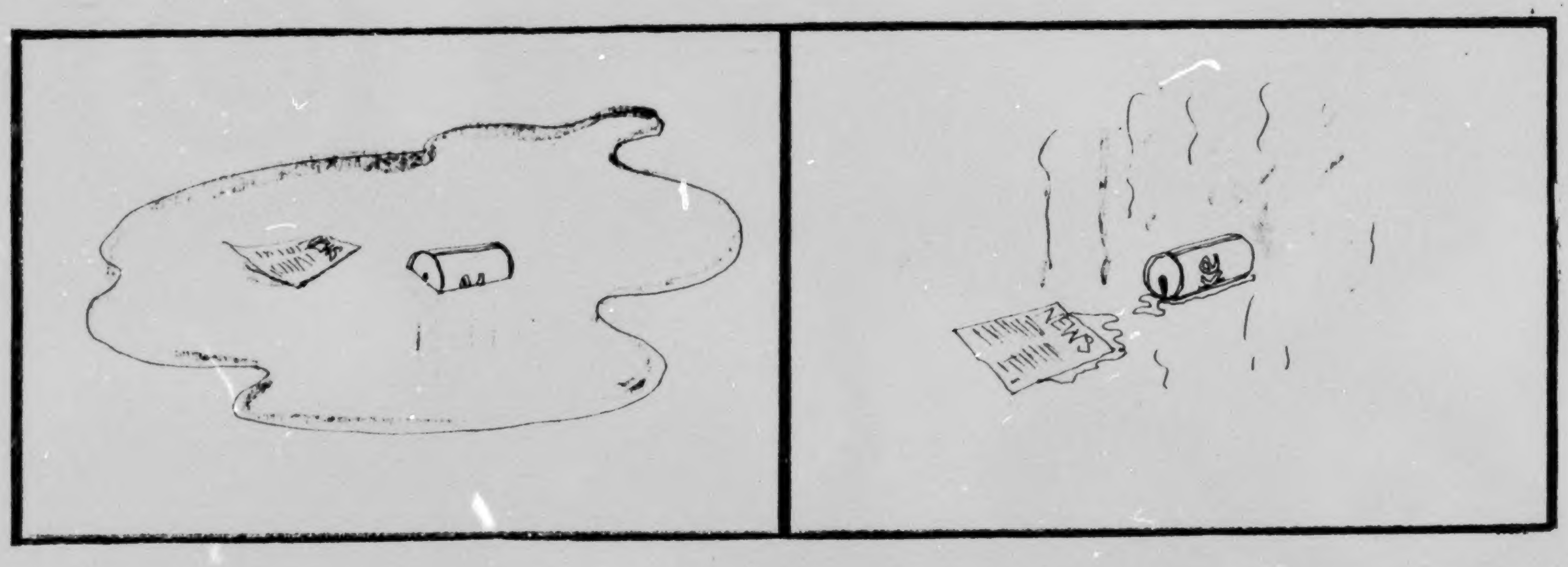


SECOND ACTIVITY FOR SKILL C

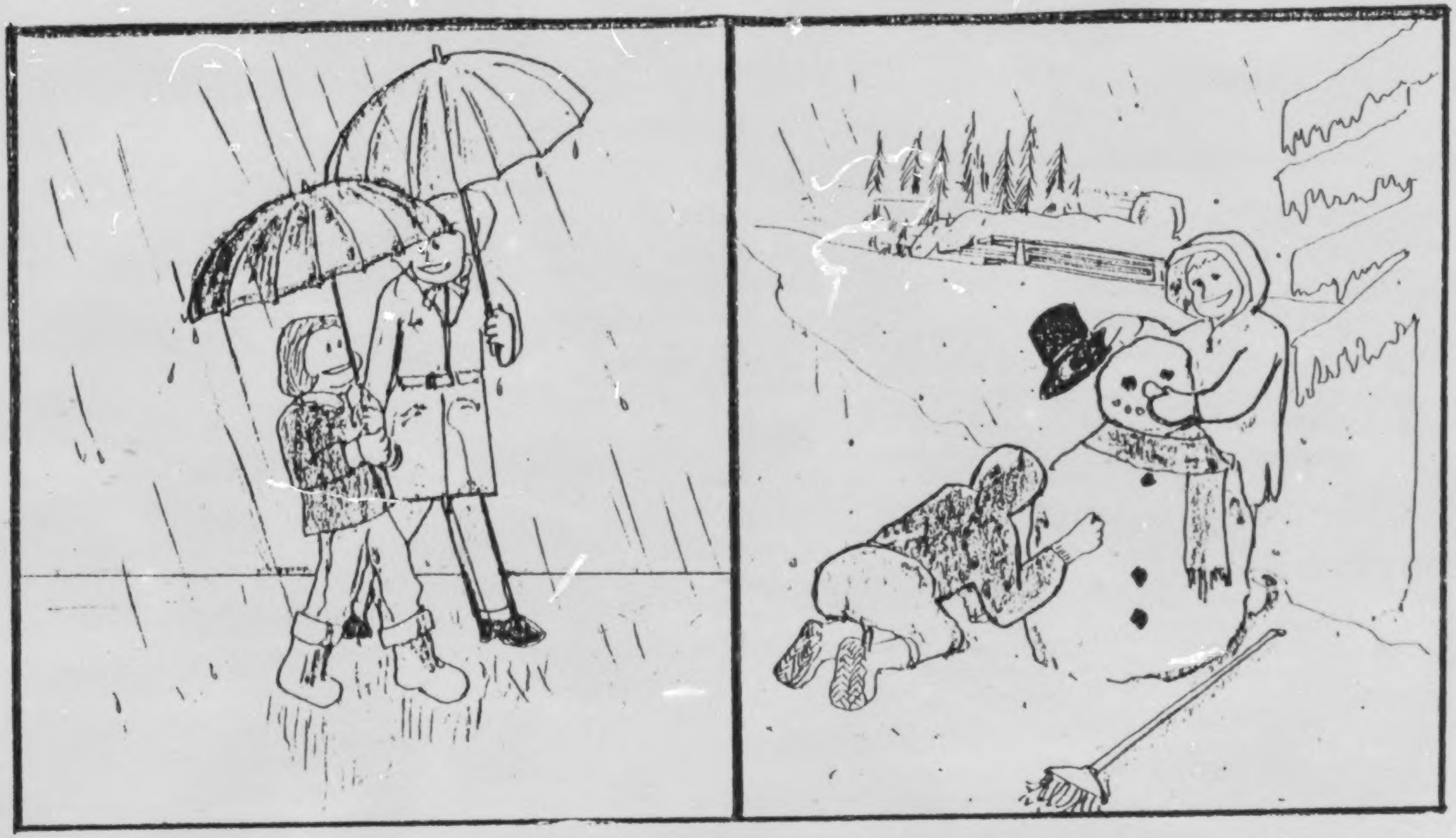
Using photographs of bodies of water again, discuss the states these bodies of water could be changed into depending on the climate. ¿Cómo se ven estos cuerpos de agua en el verano? (Líquido.) ¿Por qué? ¿Qué les sucede a los cuerpos de agua en el invierno? ¿Por qué? ¿Qué necesitan para congelarse? ¿Qué son sólidos? ¿Se quedan en estado sólido todo el año? ¿Qué les ocurre en el verano?

THIRD ACTIVITY FOR SKILL C

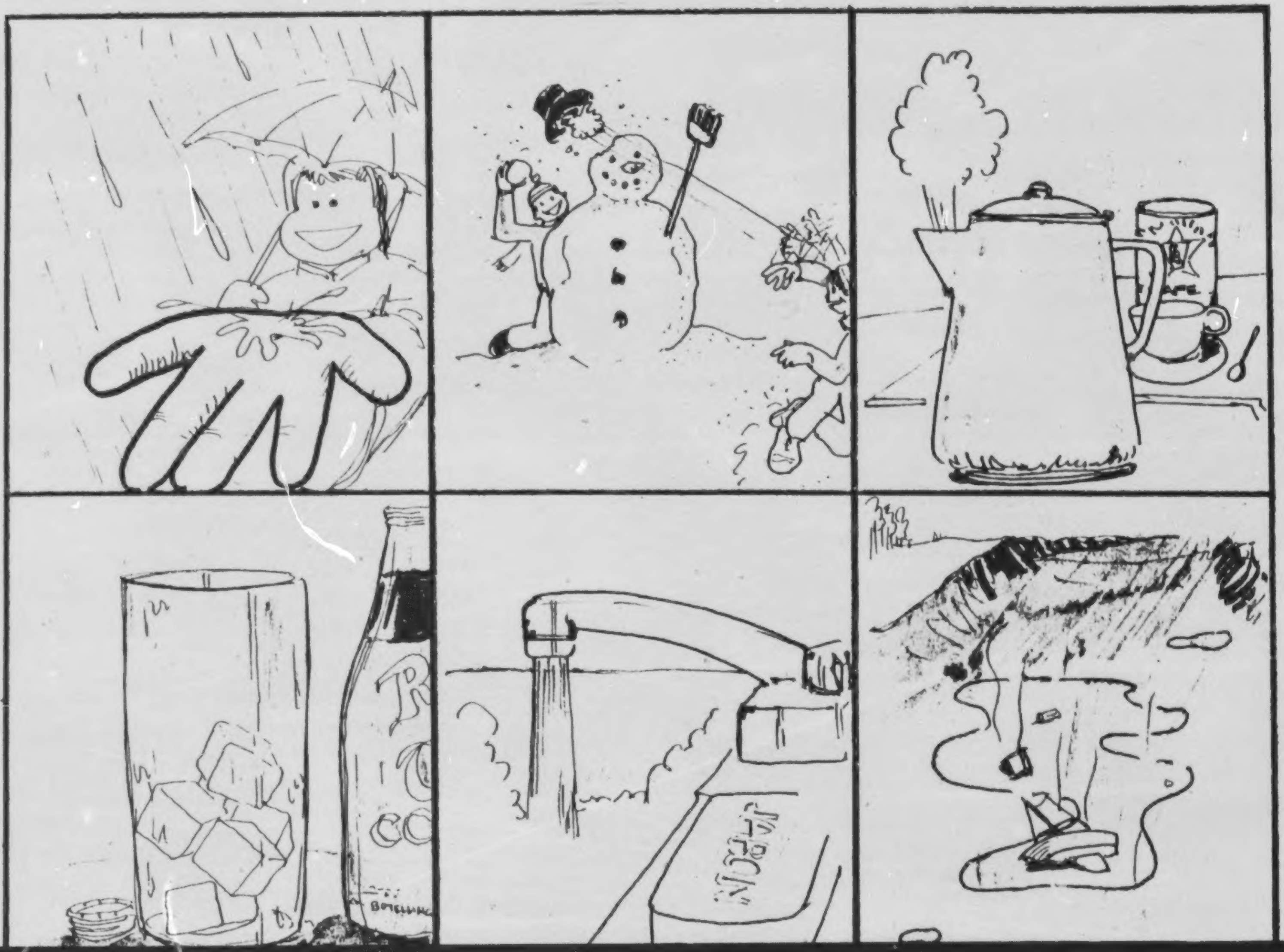
Show a picture of a small puddle of water exposed to the rays of the sun and another picture in which the puddle has dried up. Ask questions, such as: ¿Qué observas en ambas láminas? ¿Por qué crees que ya no hay agua en el charco? ¿En qué se convirtió? ¿Cuáles son las características del vapor de agua? (Es un gas.) Make certain that the children know that the water in the puddle changed from a liquid to a gas through evaporation.



FOURTH ACTIVITY FOR SKILL C Show a picture of boys and girls, or of the community, when it is raining and another when it is snowing. Discuss them, asking, for example: ¿Cuál es la diferencia entre las escenas? ¿A qué se debe? ¿Sería igual en Puerto Rico? ¿Por qué? The children should know that rain is a liquid and snow a solid.



FIFTH ACTIVITY FOR SKILL C Show pictures in which there is rain, snow, bodies of water in liquid and in solid states, evaporation of liquids, etc. Have the children group them according to the three states of matter: solid, liquid and gas.



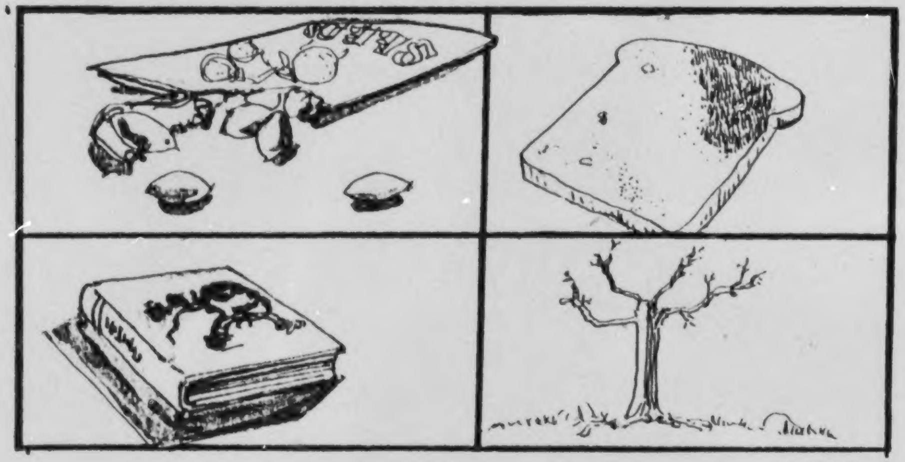
SKILL D:	Is able to infer whether an object is living or non-living by its observable characteristics.
VOCABULARY:	living non-living grow

FIRST ACTIVITY FOR SKILL D	Name plants that grow in the community. If possible, bring examples to the class. Have the children identify the parts of the plants. ¿Son vivientes? ¿Por qué?

SECOND ACTIVITY FOR SKILL D

Show pictures (or real examples) of seeds, mold on bread, a tree without leaves, etc. Ask the children, for example: ¿Qué representa cada ilustración? ¿Son vivientes? The children should apply to each object illustrated, the following criteria:

1. It is grown, or it is made.
2. It grows, or it does not grow.
3. It changes with time.
4. It needs food.



THIRD ACTIVITY FOR SKILL D

If the children should have difficulty in identifying bread mold, bring to class some ripe fruits. Leave them under a damp cloth until they grow mold. The children will observe them for two or three days with the help of a magnifying glass. Then they will describe what they observed. Lead their discussion with questions, such as: ¿Cómo son? ¿Son objetos vivientes? Si son vivientes, ¿qué características deben tener?

FOURTH ACTIVITY FOR SKILL D

In the case of the seeds, do the same. Bring some seeds, perhaps beans or corn. Let the children plant them in transparent containers. They will observe them for several days to see if they germinate. The students should express the things they need to keep in mind to insure plant growth. Ask: ¿Son vivientes? Si son vivientes, ¿qué características deben tener?

FIFTH ACTIVITY FOR SKILL D

It is possible that a tree without leaves will be difficult for the children to identify as a living thing. Lead them to discuss any related experiences they may have had with a tree, such as: a tree changing the color of its leaves, losing its leaves, bearing flowers, bearing fruits or growing new leaves. You may take the children on a field trip to look for some of these tree characteristics.

SIXTH ACTIVITY FOR SKILL D

Have the children enumerate the characteristics of living things.

SKILL E: Is able to recognize and identify the wheel, the inclined plane and the lever as simple machines.

VOCABULARY:
wheel
inclined plane
lever
machines

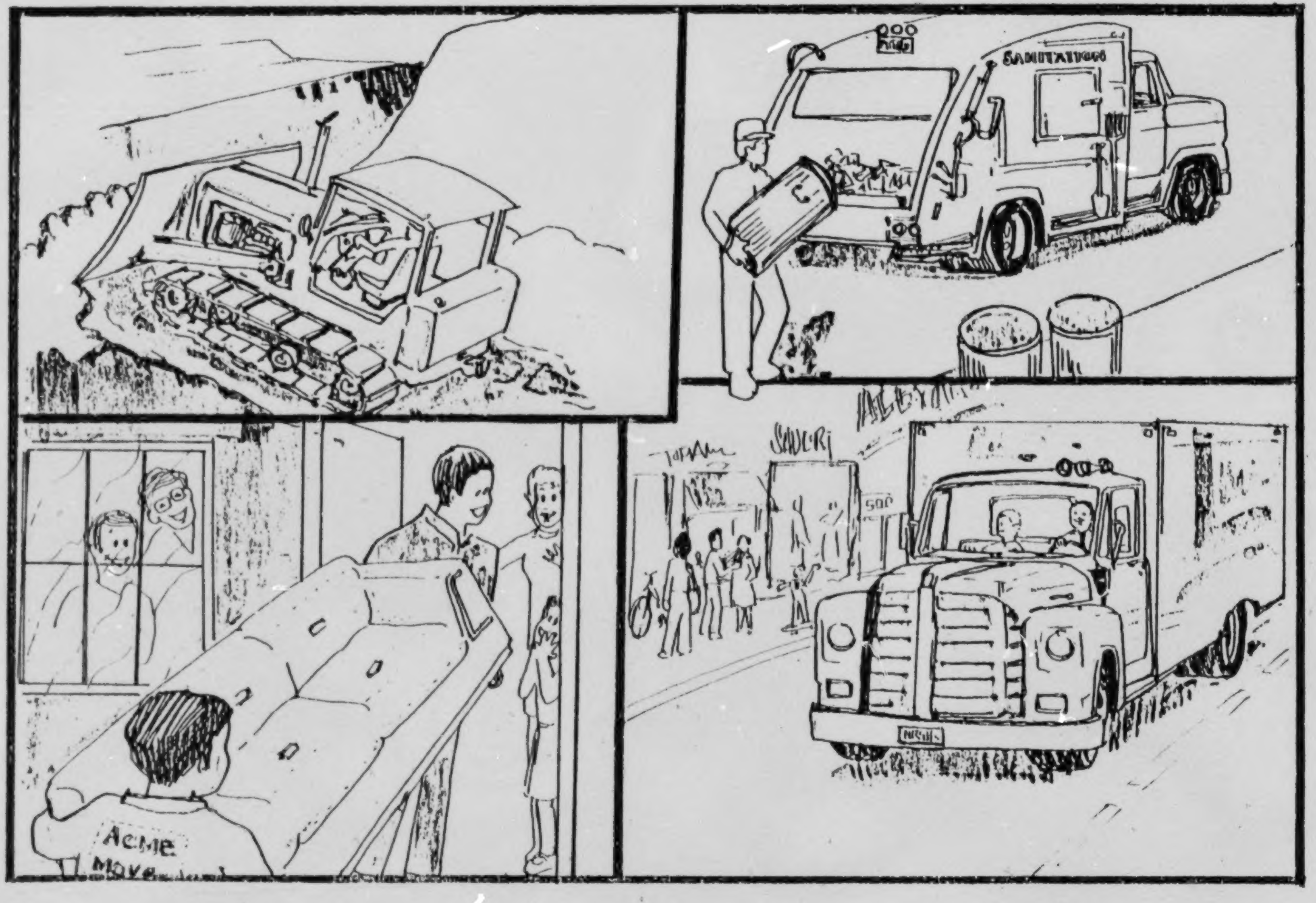
FIRST ACTIVITY FOR SKILL E

Show pictures of members of the community performing work:

Examples:
- operating heavy equipment
- collecting trash
- carrying furniture in or out of a house
- driving a truck, etc.

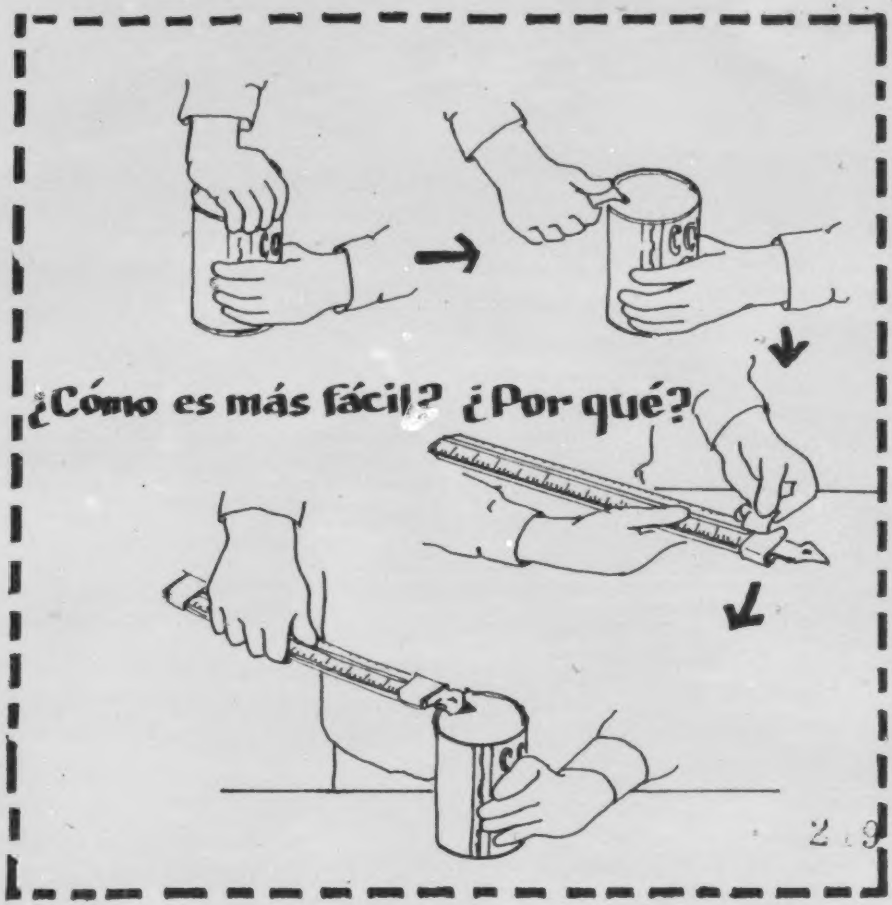
To initiate a discussion, ask, for example: ¿Qué hacen las máquinas para nostros? ¿Cómo las máquinas ayudan a las personas en su trabajo? ¿Puedes describir las partes que componen estas máquinas?

FIRST ACTIVITY FOR SKILL E:


SANITATION
Acme Move

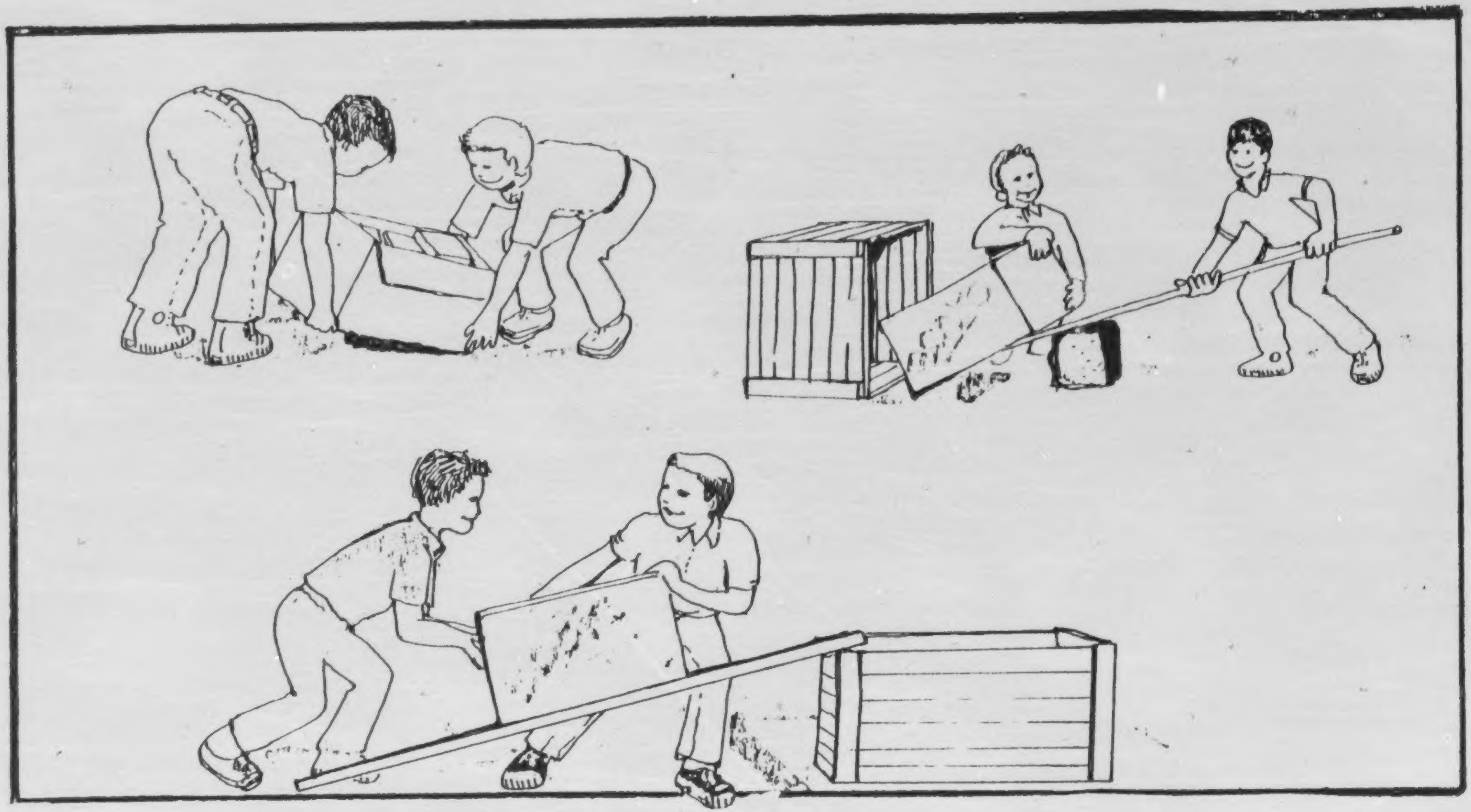
SECOND ACTIVITY FOR SKILL E

Give a student a tin can and ask him to make a hole in it using only his hands. Since this is impossible, ask him: ¿Qué podrías usar para hacer la tarea más fácil? Provide a can opener and have him/her try it. Then place one ruler on top of the opener and another one underneath, and tape the pieces together. Now ask the student to try making another hole in the can using the opener with its now longer handle. The opener with the longer handle makes the task easier. Discuss the phenomenon with the children, starting with the question, for example: ¿De qué forma es más fácil?

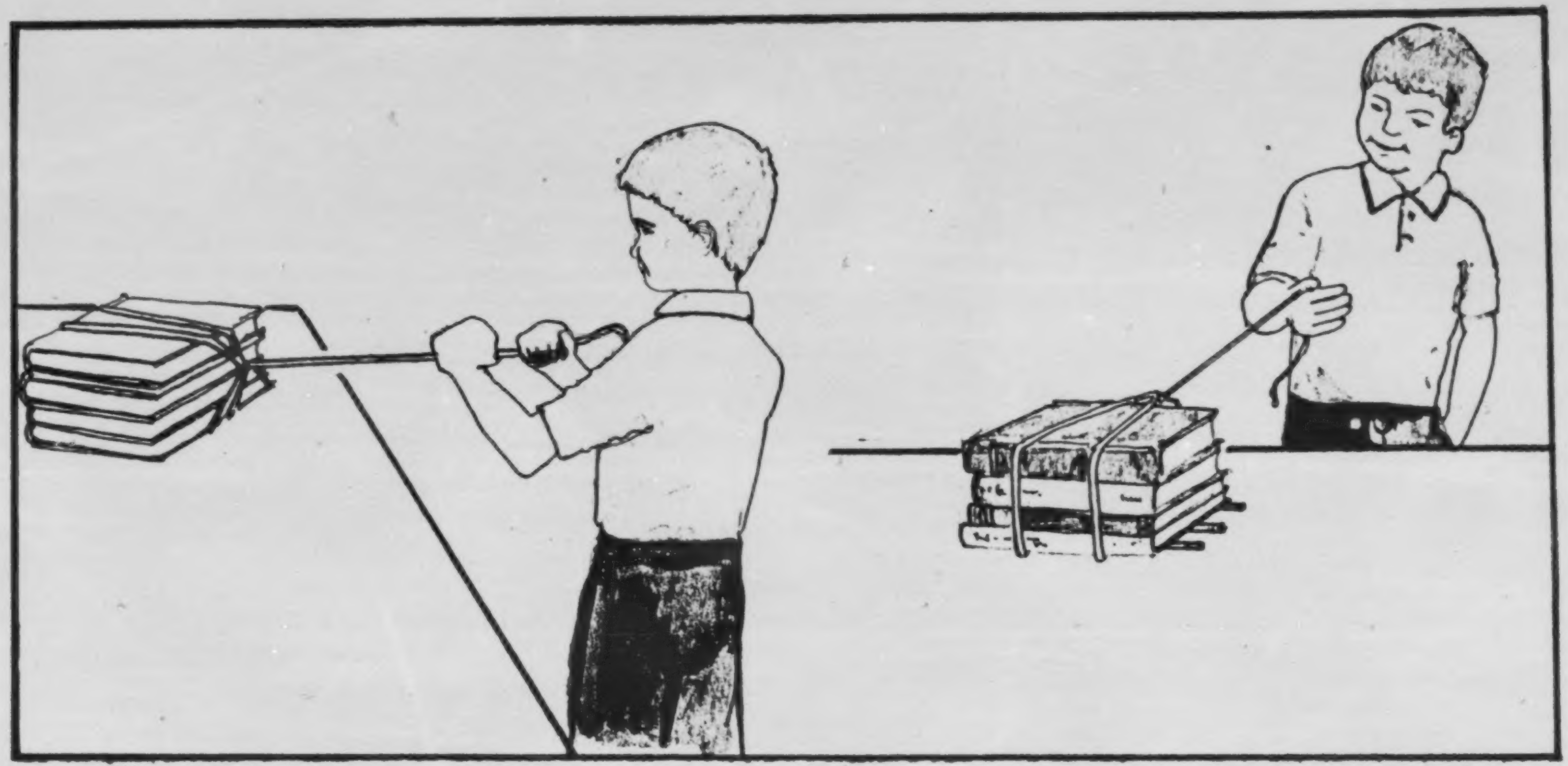

CO
CO
¿Cómo es más fácil? ¿Por qué?
CO

THIRD ACTIVITY FOR SKILL E

Invite the children to try moving a heavy object. Then urge them to use some other object to help them move it, such as: a bar or a piece of wood(2" x 4"); or a wheel or a pole or a round stick, used as a roller.



THIRD ACTIVITY FOR SKILL E — Using pencils as rollers.



FOURTH ACTIVITY FOR SKILL E

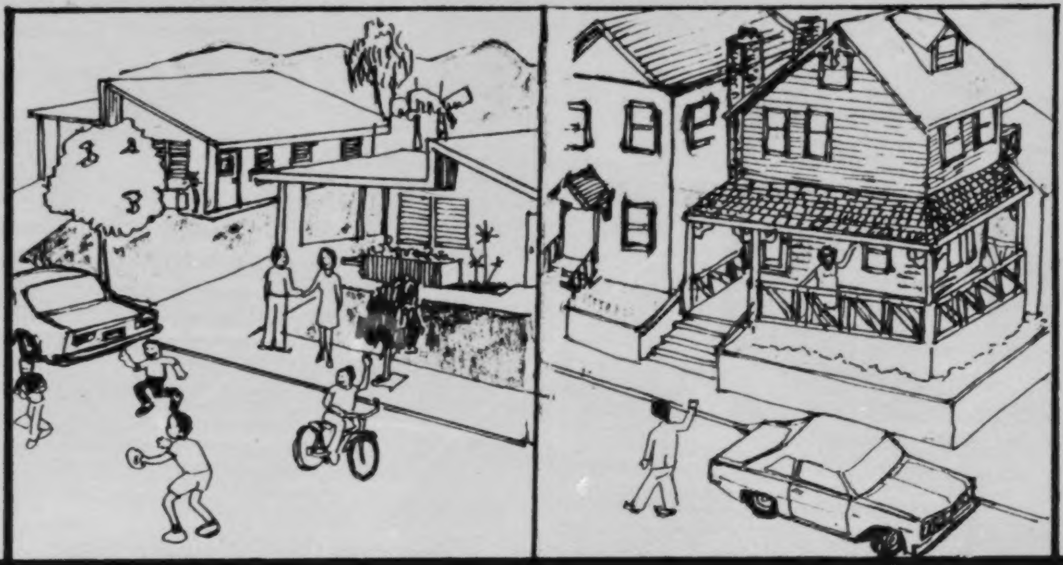
Form groups of five or six students. Provide each group with hammers, nails and a piece of wood. Ask them to hammer the nails part way into the pieces of wood (or give them pieces of wood with nails already in them). First the children will try removing the nails using only their hands. Ask, for example: ¿Habría alguna otra manera de hacerlo? Let the children pull out the nails with the claw of the hammer. ¿Fue de esta manera más fácil que usando las manos solamente? Ask them to think of other tasks which are difficult to accomplish when only muscular force is used (e.g. pulling out a cork from a bottle, lifting a heavy object, etc.).

SKILL F: Is able to describe the movement of falling objects in terms of a downward pull.

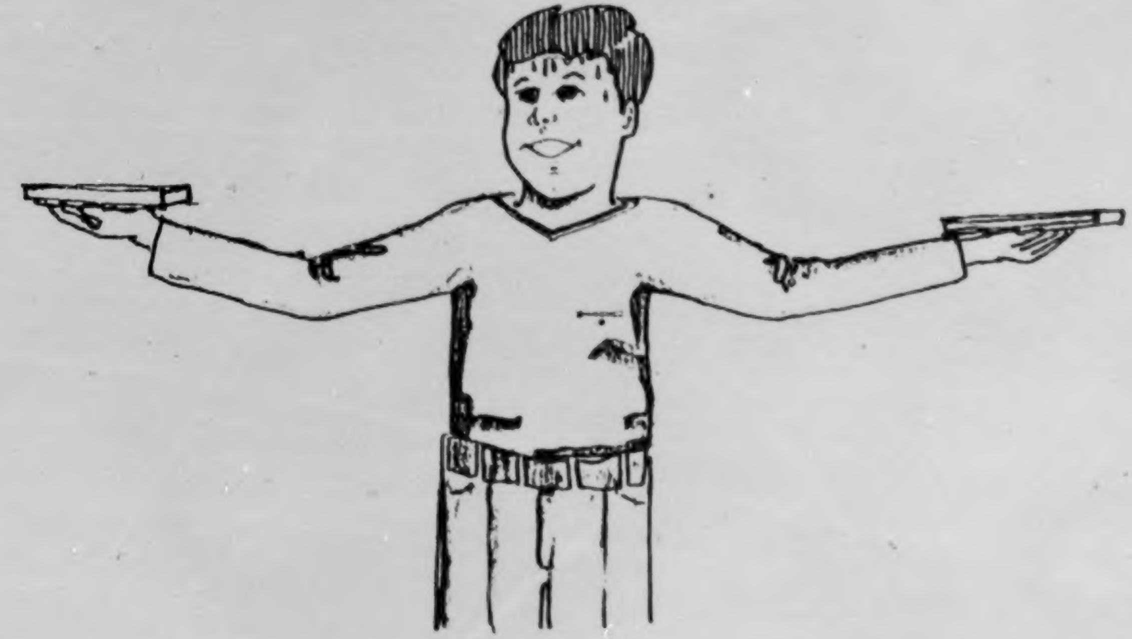
VOCABULARY:
down
downward
falling

FIRST ACTIVITY FOR SKILL F

Show pictures of a community. Describe the components of that community. Let the children express themselves in terms of their immediate community. For example, what is it composed of. They will all live in either houses or apartment buildings. Ask them about dropping an object from their bedroom window. ¿Qué le sucede a un objeto si lo lanzas a tiras desde la ventana?



SECOND ACTIVITY FOR SKILL F	Have the class observe trees found in the community. Initiate a discussion of the concept of "down" asking: Cuando los árboles mudan sus hojas, ¿hacia dónde se caen? (Hacia abajo, en la tierra.) Cuando las frutas se caen, ¿hacía dónde se caen?
THIRD ACTIVITY FOR SKILL F	Ask the children if they would like to feel the force that makes things fall. Have several children pass to the front of the room. They will hold up a light book with their arms out-stretched as long as they can. (The time will come when the child will realize that he cannot support the book any longer. He will have to drop it or lower his arms.) ¿Qué le pasó a tu brazo? ¿Por qué le ocurrió eso? ¿Sentiste como si algo te estuviera halando hacia abajo? ¿Qué lo hala hacia abajo? Al dejar caer el objeto, ¿a dónde fue? ¿Hacia dónde cayó el objeto?



FOURTH ACTIVITY FOR SKILL F

Ask a child to take a small object, such as a thread spool, and to throw it straight out in front of him. ¿A dónde fue el carrete? ¿Siguió moviéndose hacia el frente? ¿Qué hizo que no siguiera cayendo? Si hubiese hecho un hoyo donde cayó, ¿hubiera continuado el objeto moviéndose? ¿Cuán lejos hubiese caído? (Al fondo del hoyo.) Si el hoyo se hubiese hecho más profundo, ¿continuaría cayendo el carrete? ¿Cómo hemos movido los objetos antes? (Halando o empujando.) ¿Empujaron o halaron los niños los objetos que se dejaron caer? ¿Qué creen ustedes que los hizo caer? Give the children the opportunity to draw inferences. Accept all answers for the moment as long as the children mention the fact that the object eventually comes down.

FIFTH ACTIVITY FOR SKILL F

Ask some children to toss some balls upwards. They should observe how high the balls rise. Ask the children to watch the balls when they are thrown upward and to describe what the balls do. They will see that the balls go up, pause, and begin to come down. Repeat the action several times until the class is ready to answer the following questions: Cuando la bola se tira hacia arriba, ¿ha sido la bola empujada o ha sido halada? ¿Por qué necesita la bola un empujón? Cuando la bola empieza a caer, ¿está siendo empujada o halada? Have the children explain their answers. Help them understand that downward means toward the ground.

SIXTH ACTIVITY FOR SKILL F

Show a picture of an object that is falling. Ask the students:

1. ¿Cómo vemos el objeto? (Cayendo)
2. ¿Hacia dónde se mueve? (Hacia abajo)

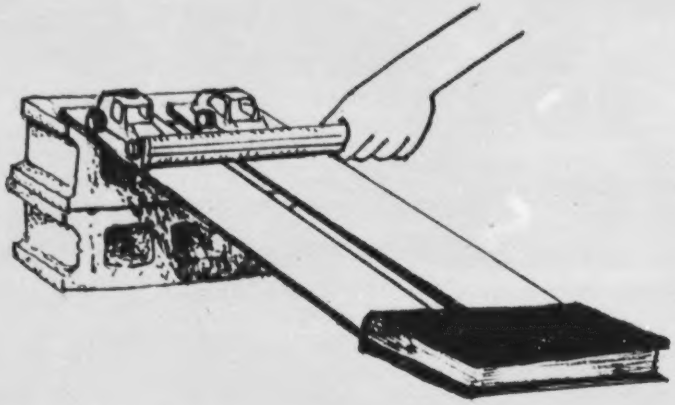
UNIT 6: Transportation

Skill A:	To compare the speed of moving objects in relation to others.
Skill B:	To compare and describe time intervals required for different activities to occur in terms of a lot of time or a little time.
Skill C:	To identify and compare the position of some objects with respect to others in terms of left and right.
Skill D:	To identify and compare the position of some objects with others in terms of up and down.
Skill E	To compare lengths using an object of known length and shape.

SKILL A:	Is able to compare the speed of moving objects in relation to others.
VOCABULARY:	fast, faster, fastest slow, slower, slowest
FIRST ACTIVITY FOR SKILL A	Narrate to the class Aesop's fable of the tortoise and the hare. Then ask two students to play the roles of the hare and the tortoise to dramatize the story. Discuss the story with them: A pesar de que la tortuga ganó la carrera, ¿cuál de los dos animales se mueve normalmente más rápido? ¿Cuál se mueve normalmente más lento?
SECOND ACTIVITY FOR SKILL A	Ask two students to dramatize the story again to demonstrate which of the animals would have won, if the hare had not stopped to rest. ¿Cuál se movió más rápido? ¿Cuál se movió más lento?
THIRD ACTIVITY FOR SKILL A	Select two students of approximately the same height and weight. One will walk (normally) toward a goal which is chosen (and marked with chalk). The other student will crawl on hands and knees while the rest of the class counts to ten. The two students will stop where they are when the other children reach the count of ten. (Mark the spots with chalk.) Ask the rest of the class: ¿Quién está más adelante? ¿Quién se movió más rápido? ¿Quién se movió más lento? Ask the rest of the class to compare, using a string, the distance traveled by the child who walked with that of the one who crawled.

FOURTH ACTIVITY FOR SKILL A

Show the class two roller skates or similar toy cars. Place the skates on a ramp or inclined plane as indicated in the illustration below:

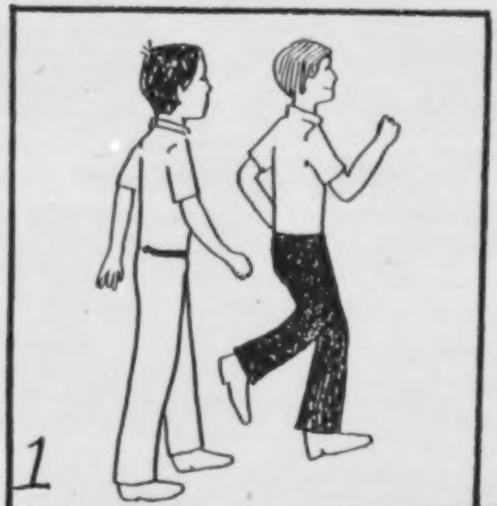


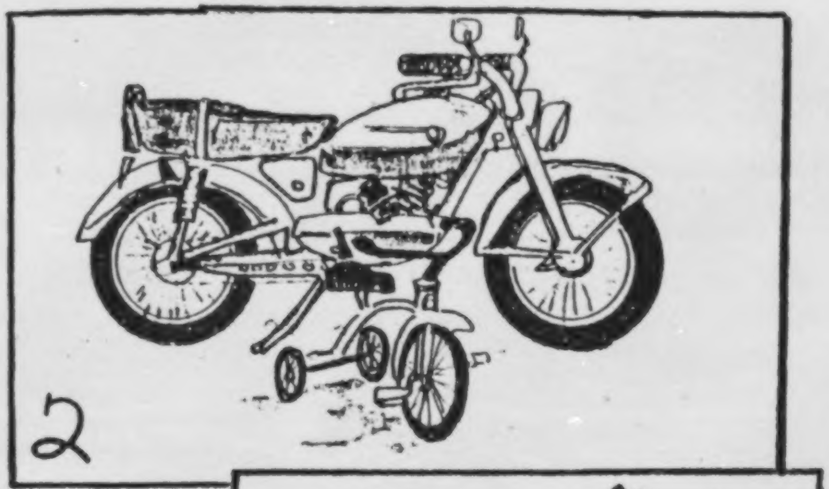
The cars should start initially from the same point. To do this, the cars on the inclined plane are held in place with a ruler or some other object. Raise the ruler and let the cars go down the ramp. Repeat the process varying the starting point of the cars. Ask the students to observe which of the cars reaches the goal line first. Invite the students to try the cars from different starting points on the inclined plane. ¿Cuál llega más rápido? ¿Por qué? What happens when the incline is made steeper?

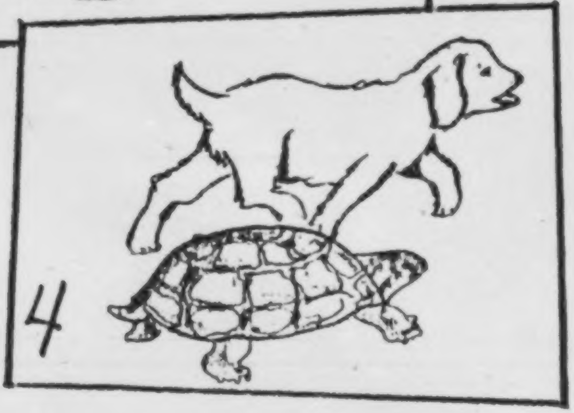
FIFTH ACTIVITY FOR SKILL A

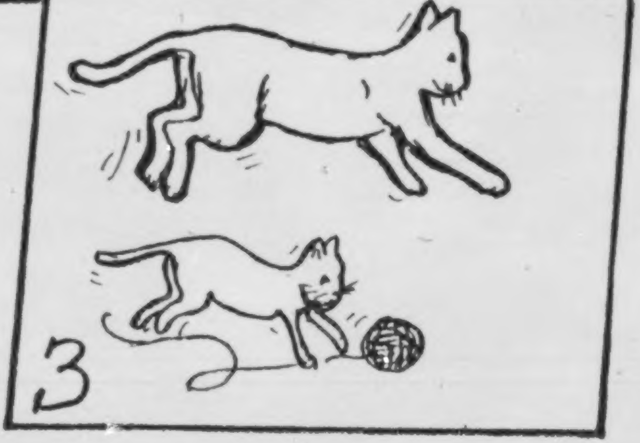
Ask the students to look carefully at the different numbered illustrations below and to select in each pair of objects the one which will move faster.

1. child walking - child running
2. bicycle - tricycle
3. big cat - little cat
4. turtle - dog









SKILL B:	Is able to compare and describe time intervals required for different activities to occur in terms of a lot of time or a little time.

VOCABUARY: a lot of time
a little of time

FIRST ACTIVITY FOR SKILL B

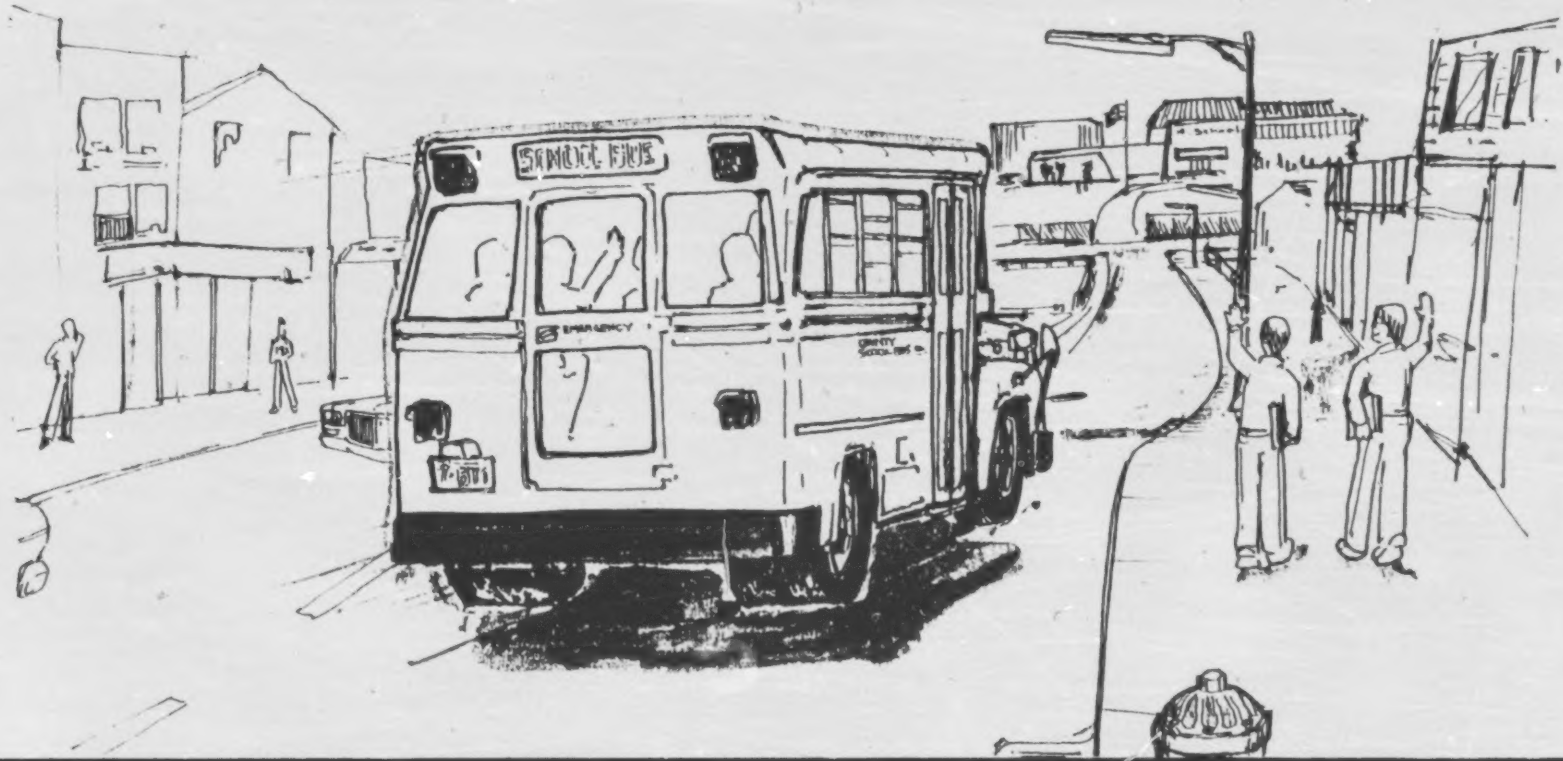
Ask a student to go to the front of the class to do whatever you tell him to. For example: walk from the door to the back of the room, carry a book from one desk to another, etc. While the student performs his activity, the class, directed by the teacher will sing a song. (The song can be written on the blackboard or on a poster.) They will stop singing when the student finishes his assigned task. They will note up to what part of the song they sang or if they had to repeat it. Then another student will carry out an activity, different from the one done by the first student, and the class will sing again. They will compare the parts of the song that they sang (or the number of times that they repeated it) both times. Ask, for example: ¿Cuándo fue que contamos más, cuando____________________(student number 1) corría o cuando____________________(student number 2) llevaba el libro? ¿Cuánto tiempo te tomaría a ti hacer lo que hizo________________(first number)?

SECOND ACTIVITY FOR SKILL B

Divide the class into three groups. Distribute pieces of paper (in three sizes) to each group. One of the groups should have big pieces; the second group will have small pieces; and third group, even smaller pieces. At a prearranged signal, ask them to tear their pieces of paper in two, using only their hands. When they have done so, they should raise one of the pieces up in the air. Ask questions such as: ¿Quién terminó primero? ¿Por qué terminó primero? ¿Quién terminó después que ______________? ¿A quién le tomó mucho tiempo? ¿A quién le tomó poco tiempo?

THIRD ACTIVITY FOR SKILL B

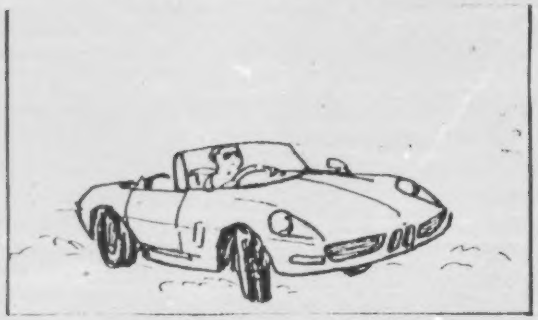
Show pictures of students walking and of students traveling by bus, both leaving the same starting point. Ask: ¿A quiénes les tomará mucho tiempo en llegar? ¿Por qué?

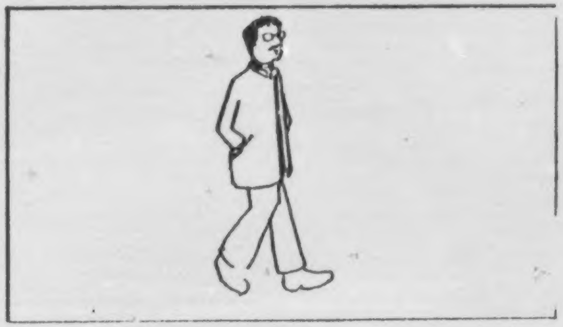


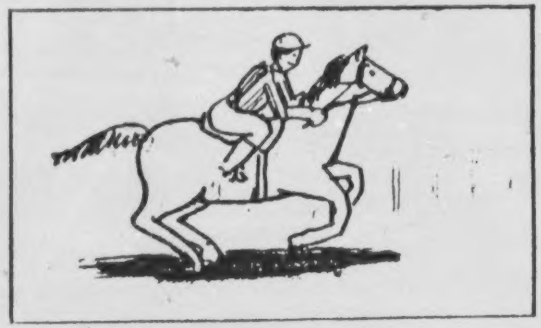
FOURTH ACTIVITY FOR SKILL B

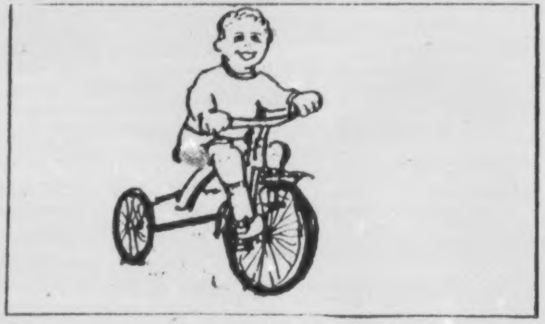
Show pictures of different means of transportation:

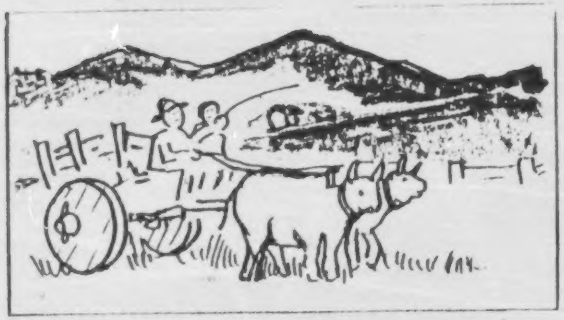
- on foot
- on horseback
- in an ox cart
- on a bicycle
- in a car
- in an airplane
- on a train
- on a tricycle

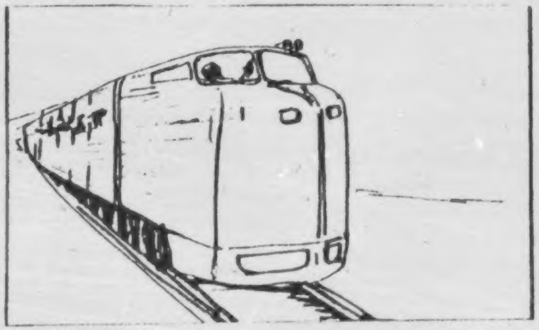


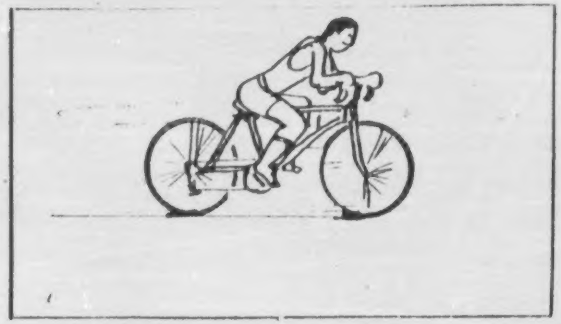


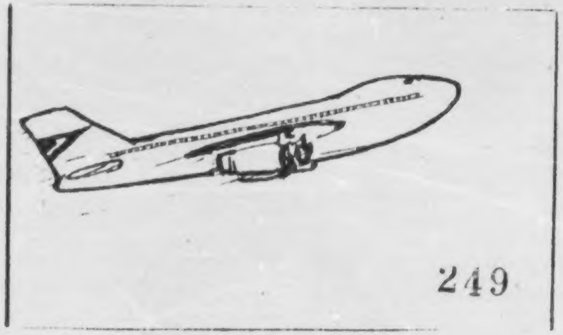












SKILL C:	Is able to identify and compare the position of some objects with respect to others in terms of left and right.
VOCABULARY:	left right

FIRST ACTIVITY FOR SKILL C

Begin this lesson by diagnosing and exploring what knowledge the children have in relation to the terms right and left. We suggest the following questions to initiate the development of this lesson: ¿Qué mano usas para coger el tenedor? ¿Con qué mano pintas? Give each child a piece of paper. Ask the children to place it in their right hand and to raise it. Ask: ¿Tienen todos la franja en la mano derecha? Sostenga cada uno su mano en esa posición hasta que yo les diga. Check. If all have done it correctly, procede with another activity. If not, divide the class into two groups: those who have the slip of paper in their right hand and those who have the slip of paper in their left hand. Get the latter group to compare the position of their slips of paper with that of the first group. If they still do not realize that they have put the paper in their left hand, let them know that they have it placed incorrectly. Ask them to place it in the correct position, that it, in their right hand.

SECOND ACTIVITY FOR SKILL C	Draw (trace) the two hands of a student on the blackboard and ask the rest of the class to identify them in terms of left and right. ¿Cuál es la mano izquierda? ¿Cuál es la derecha? Two or three students can do the same on the blackboard. The children will repeat the activity tracing the outline of their feet on the floor.
THIRD ACTIVITY FOR SKILL C	Get the children to sing and dramatize this song: Tengo dos manitas, Mírelas usted. Esta es la derecha y ésta izquierda es.
FOURTH ACTIVITY FOR SKILL C	Ask several children to go to the front of the group. Organize them into two groups of an equal number of students. Give one group a piece of strong string or rope. Ask them to take the string by one end and to give the remaining to the other group. Both groups are going to pull their ends. Tell one group to pull to the right and the other to pull to the left of the classroom. This might be a good time to point out that the left or the right of the classroom depends upon which direction the students are facing. Ask: ¿Qué grupo hala más fuerte? The class will indicate the group that is pulling more strongly, saying in a loud voice, whether it is the group on the left or the one on the right.
FIFTH ACTIVITY FOR SKILL C	Ask several children to stand and to take so many steps to the left or to the right.

SIXTH ACTIVITY FOR SKILL C

Tell a student to stand with his back to the group. Then ask him to raise his right hand. The class will do the same. Then you may ask: ¿Qué cosas están a la derecha de_______________________? ¿Cuáles están a la derecha?

SEVENTH ACTIVITY FOR SKILL C

Choose four students to stand in front of the class. Tell them that, while the rhyme below is recited by the group, they are going to raise their arms, following the directions indicated in it:

Izquierda, derecha.
Arriba, abajo,
derecha, izquierdo
y de nuevo abajo.

Ask: ¿Qué brazo movió_______________________ (one of the students) cuando se dijo izquierda? ¿Qué brazo movió_______________________ cuando se dijo arriba?

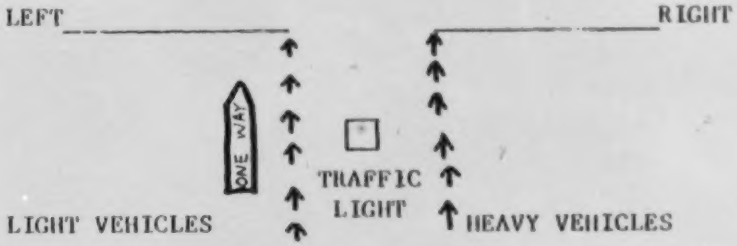
EIGHTH ACTIVITY FOR SKILL C

Ask a policeman to speak to the class about the importance of obeying traffic signals. (From an early age the children should be developing a consciousness of the policeman as a public servant who guards the safety of people.) The children will simulate the following activity: They will have a traffic light and will play the occupations that are related to public safety, namely:

a. the policeman
b. drivers of emergency vehicles (fire and ambulance)
c. drivers of trucks
d. drivers of passenger cars (salesmen, teachers, secretaries, etc.)

Each child will decide the occupation he wants to represent. The children will form two lines; on the left, light vehicle (passenger car) drivers and on the right, drivers of heavy vehicles such as trucks.

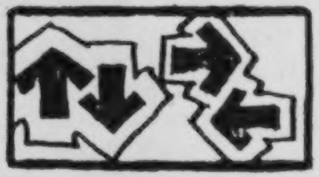
The teacher will have arrows indicating traffic directions.



¿Qué sucede cuando viene la ambulancia, el carro del bombero, etc.? ¿Qué deben hacer las otros carros?

NINTH ACTIVITY FOR SKILL C

Use a poster with arrows:



The arrows will point up, down, left and right. Ask a student to pass to the front of the room and indicate with his left hand the arrow that points to the right, and with his right hand, the arrow that points left, etc.

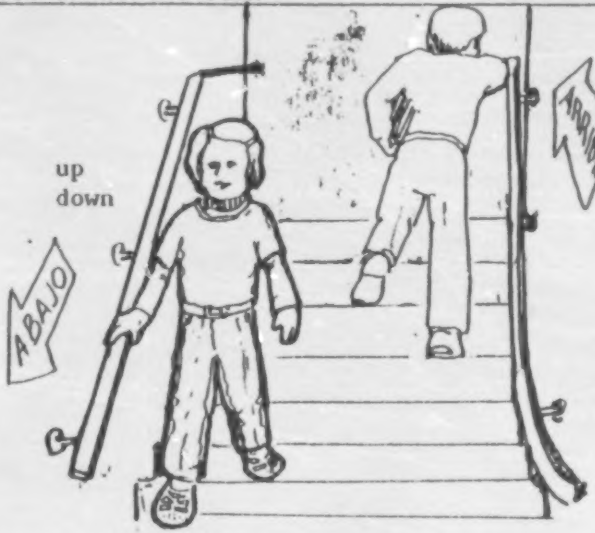
TENTH ACTIVITY FOR SKILL C

Place three (or more) classroom objects on a table, widely separated one from another, against the wall. Point to one of them and ask the students to name the object that is to the left and to the right of the one you pointed to.

ELEVENTH ACTIVITY FOR SKILL C	Place two pictures (or clippings of pictures) on a wall or on the blackboard. Ask the students which is on their right and which is on their left.
TWELFTH ACTIVITY FOR SKILL C	Ask a student to take two steps toward the front, then one to the left, then two to the right, etc.
THIRTEENTH ACTIVITY FOR SKILL C	Place three different objects horizontally. Point to the object in the middle. Ask the students to indicate the object that is to the left and to the right of the center object. Change the position of the two objects on the ends. Ask them to name the one that is on the right and the one on the left now. Change the position of the center object so that it is on one end. Ask again for the one on the left and for the one on the right. Try to make sure that the children always use one object as a point of reference.

SKILL D: Is able to identify and compare the position of some objects with others in terms of up and down.

VOCABULARY: up
down



FIRST ACTIVITY FOR SKILL D

Invite the children to play Sube y Baja. Ask them to stand, all facing in the same direction with their arms extended to the side. They will sing the rhyme while they move their bodies so that one arm goes up and the other goes down.

Subo y bajo
Qué bueno es subir, bajar
uno, dos, qué alto estoy.
Arriba, abajo, abajo, arriba.
Y luego abajo; abajo voy.

Comment on the game: ¿Hacia dónde señalamos cuando decimos arriba? ¿Cuándo decimos abajo? ¿Cuándo es que un brazo está arriba? ¿Cuándo es que un brazo está abajo?

SECOND ACTIVITY FOR SKILL D

Tell a student to throw a ball upwards and to indicate the direction in which it is moving by saying: arriba. Do the same thing, but downwards.

THIRD
ACTIVITY
FOR
SKILL D

Ask the children to play airplane. Everyone will build paper airplanes to toss in the air. A leader will say arriba, and then the students will all launch their airplanes. At the point when each plane goes down, its owner will shout, abajo!

The children will sing the song, El avión:

Al aeropuerto fui con papá,
y en un avión pude pasear,
subí muy alto, volví a bajar,
y por las nubes puedo volar...
TR...TR...TR...
Rrr...Rrr...Rrr...
Vimos los campos de Puerto Rico,
las bellas olas del ancho mar,
verdes, palmares, verdes montañas
donde florece el flamboyán.

(The teacher may take advantage of this activity to have the children name some of the occupations that exist in aviation. The teacher will talk about them with the children.) For example:

- pilot
- co-pilot
- stewardess
- steward
- flight control operators
- ticket and reservations person

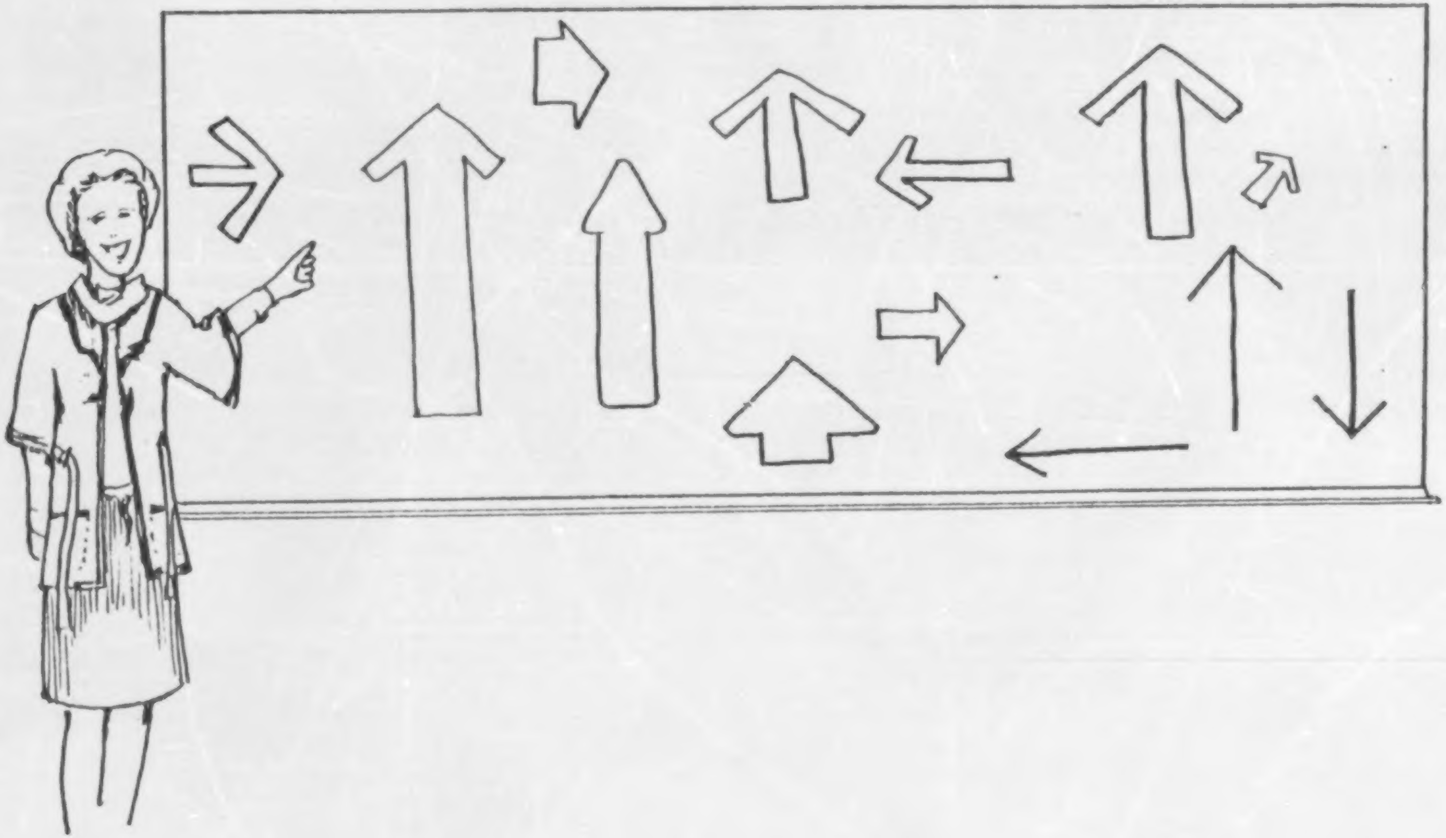
The children will simulate this family of occupations in the classroom while they fly their airplanes and will decide the roles they are to play. As a center of attention the teacher will have some airplanes, besides those that the children made in class so that they may practice the concept of up and down. Some will raise their arms up, holding their airplanes in their hands. Others will lower their arms and do the same exercise.

EXAMPLE: arriba - el avión volando

abajo - el avión aterrizando

FOURTH ACTIVITY FOR SKILL D

Put on the blackboard several arrows in different positions. Ask: ¿Cuál está más arriba? ¿Cuál está más abajo?



SKILL E: Is able to compare lengths using an object of known length and shape.

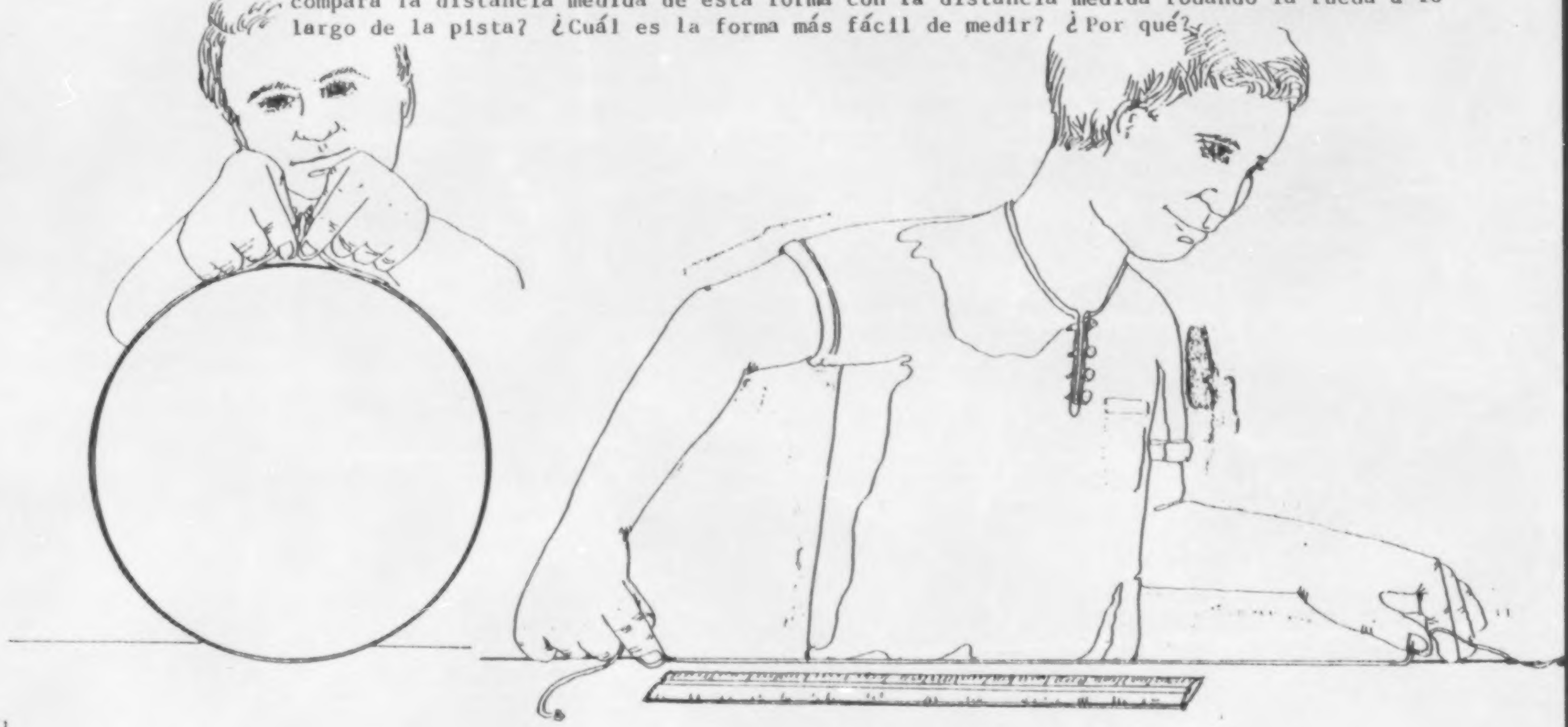
VOCABULARY:
- distance
- measure
- rotate
- one complete rotation
- far, farther, farthest

FIRST ACTIVITY FOR SKILL E

Show the children a strip of paper and two cardboard circles of different sizes. Ask them to pretend that the circles are the wheels of a race car and that the strip of paper is part of the track. Ask, for example: Si dejamos rodar ambas ruedas una vez, ¿cuál de las dos llegará más lejos a lo largo de la pista? ¿Hasta dónde creen ustedes que llegará cada rueda en una vuelta? Ask the children to think of ways of proving their predictions. Help them to realize that one way of finding out how far the wheels will travel is to make them rotate or roll along the track. Do the children see the need for making a mark on the wheel to show them where one rotation begins and ends? Have the children make a mark on the spot on the track where the wheel begins a rotation and where it finishes it. Ask them to measure the distance traveled by each wheel when they were rolled to compare those distances.

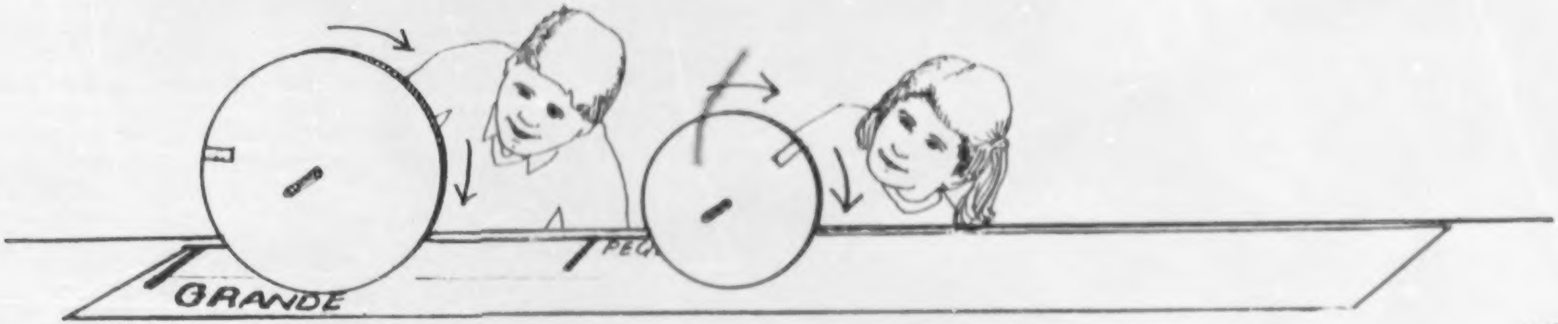
SECOND ACTIVITY FOR SKILL E

Hold up a piece of string. Ask the children whether the string suggests an idea to them for a way to measure the distance traveled by a wheel in one turn, without actually rolling it along the track. Show the children how to measure the distance around the wheel using the string. Then ask them to place the string along the track. You may then ask: ¿Cómo compara la distancia medida de esta forma con la distancia medida rodando la rueda a lo largo de la pista? ¿Cuál es la forma más fácil de medir? ¿Por qué?



THIRD ACTIVITY FOR SKILL E

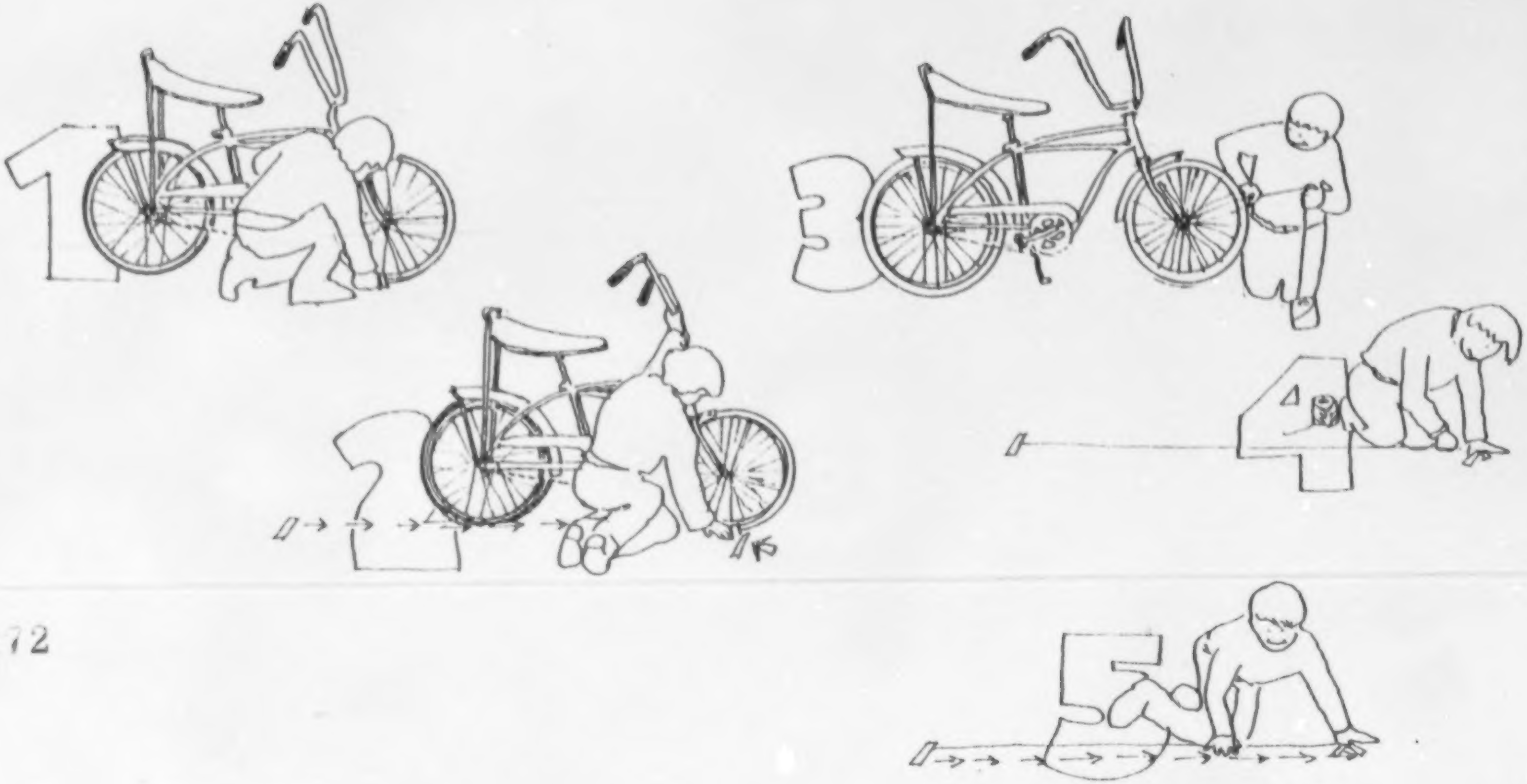
Show the children two wheels, one large and one small. Ask the children to make an estimate of the number of times that they will have to roll the big wheel in order to reach the end of the track. Then, how many turns will the small wheel have to make to cover the same distance? Let the children test their predictions, both by rolling the wheels and by measuring with the string. You may then ask: ¿Cuál de las dos ruedas tiene que dar más vueltas para llegar al final de la pista? ¿Por qué?



FOURTH ACTIVITY FOR SKILL E

Provide some round objects (such as: paper cups, round wastebaskets, round containers) or ask the children to bring playthings such as wagons, bicycles, little cars, etc. The children will predict the distance traveled in one rotation or they will guess how many turns will be needed to cover a particular distance. Invite them to check out their estimates, using the methods that they have learned in the lesson.

Exhibit some of things that the children measured, as well as the articles used to make the measurements. The larger objects can be measured in the school yard instead of in the classroom.



The Daily Paper

UNIT 7: Communication

Skill A:	To identify and name the following three-dimensional shapes: the cone, the cylinder and the pyramid.
Skill B:	To identify shapes as symbols of communication.
Skill C:	To identify and name the following three-dimensional shapes: the cube, the sphere and the parallelpiped (rectangular block).

SKILL A: Is able to identify and name the following three-dimensional shapes: the cone, the cylinder and the pyramid.

VOCABULARY:
three-dimensional shapes
cone
cylinder
pyramid

FIRST ACTIVITY FOR SKILL A

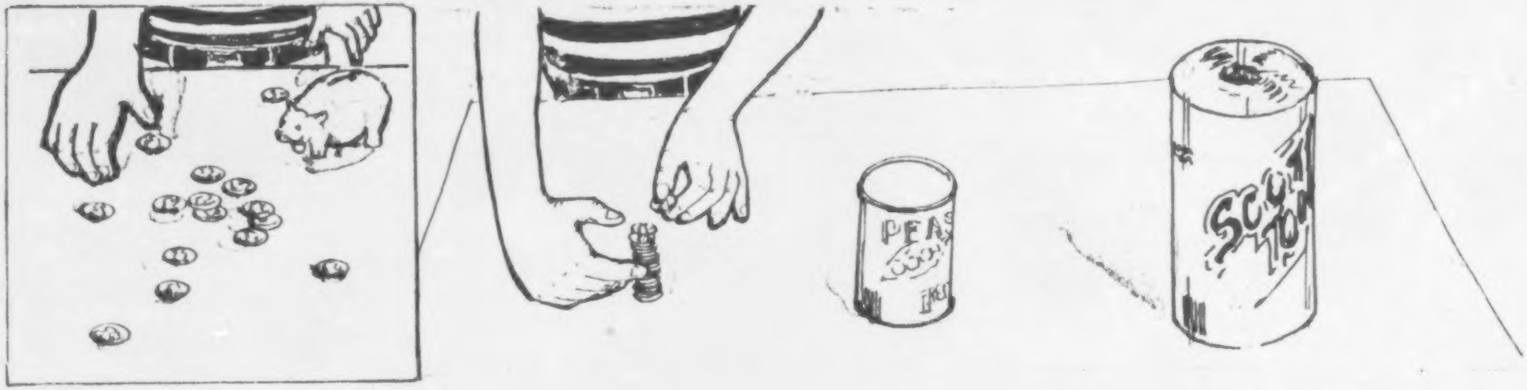
First ask the students to name all the means of communication with which they are familiar. Initiate a discussion with them about drawing pictures as a form of communication. ¿De qué otra manera podemos communicarnos? (A través del dibujo.) Las personas al dibujar nos dan mensajes. Para dibujar, ¿qué necesitamos saber? (Colores, líneas, textura y formas.) ¿Qué formas conoces? Además de ésas tenemos otras. Point out the need to know about colors, lines, texture and forms in drawing.

SECOND ACTIVITY FOR SKILL A

Invite the children to play ¿Qué es? Place some objects of conical, cylindrical and pyramidal shape into a paper bag. Blindfold a student and ask him to take one of the objects out of the bag and identify its shape by touch. The group will tell him if they agree with his identification. Repeat the game with other students until the bag is empty. Separate the objects whose shapes were identified from the unidentified ones.

THIRD ACTIVITY FOR SKILL A

Distribute a number of cardboard circles of the same size (or pennies) to some of the students and ask them to identify the circular shape. Ask: ¿Qué te gustaría hacer con los círculos? Get them to stack the circles one on top of the other. ¿A qué forma se parece ahora? Place a tin or aluminum can or a roll of paper or a hair curler, etc. next to the figure formed by the children with the stacked cardboard circles. ¿Se parecen las dos formas? ¿En qué se parecen?



FOURTH ACTIVITY FOR SKILL A

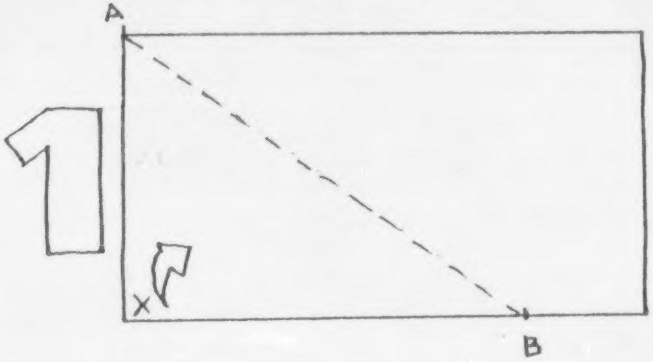
Show the children a cylindrical object, such as: a soda can, candles, pencils, etc. Identify the shape by its name: cylindrical. Have the children look for and point out objects in the classroom that have the same shape. So that the children learn the name, get them to name as many objects from their environment as possible which have the same shape. Lead the children to identify the bases of the cylinders as circular in form.

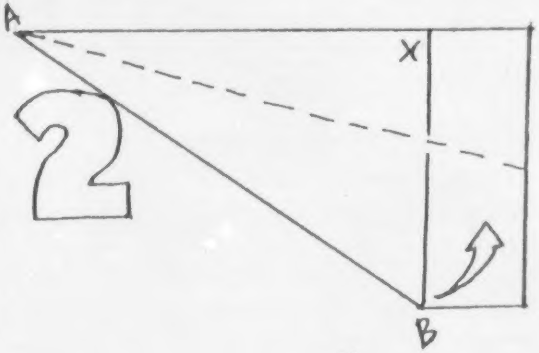
FIFTH ACTIVITY FOR SKILL A

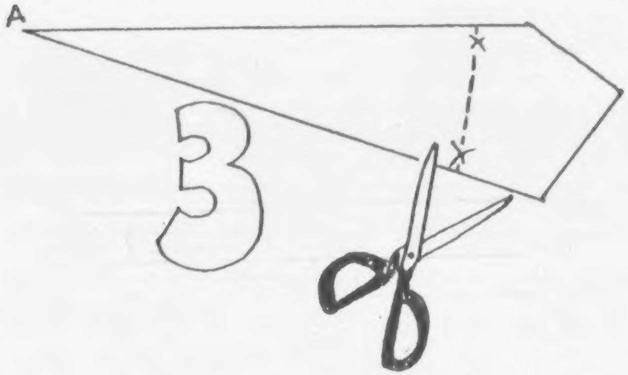
Make a pyramid according to the directions below. Show it to the class. Have them identify the form that each one of the faces looks like, asking, for example: ¿A cuál de las figuras bidimensionales se parece cada cara de la pirámide?

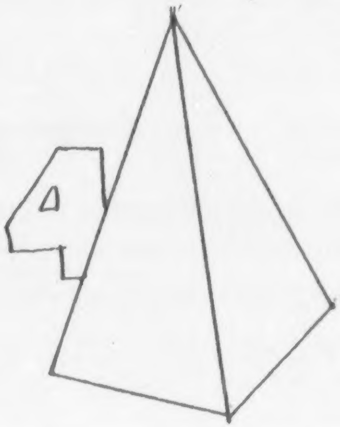
Fold a sheet of paper on the dotted line from A to B (Diagram 1), so that the A-X line is flush with the top of the paper. Fold up again on dotted line (Diagram 2), so that bottom fold is flush with top of paper, as in Diagram 3. Mark bottom fold of Diagram 3 with an X as far from A as the top X is. Cut along this line.

Now you have a triangle, but if you open it up you can make a three or four-sided pyramid (Diagram 4).









SIXTH ACTIVITY FOR SKILL A	Form several small groups of students. Give plasticine to each group. Ask them to make some of the three-dimensional shapes studied and to identify them by name.

SKILL B: Is able to identify shapes as symbols of communication.

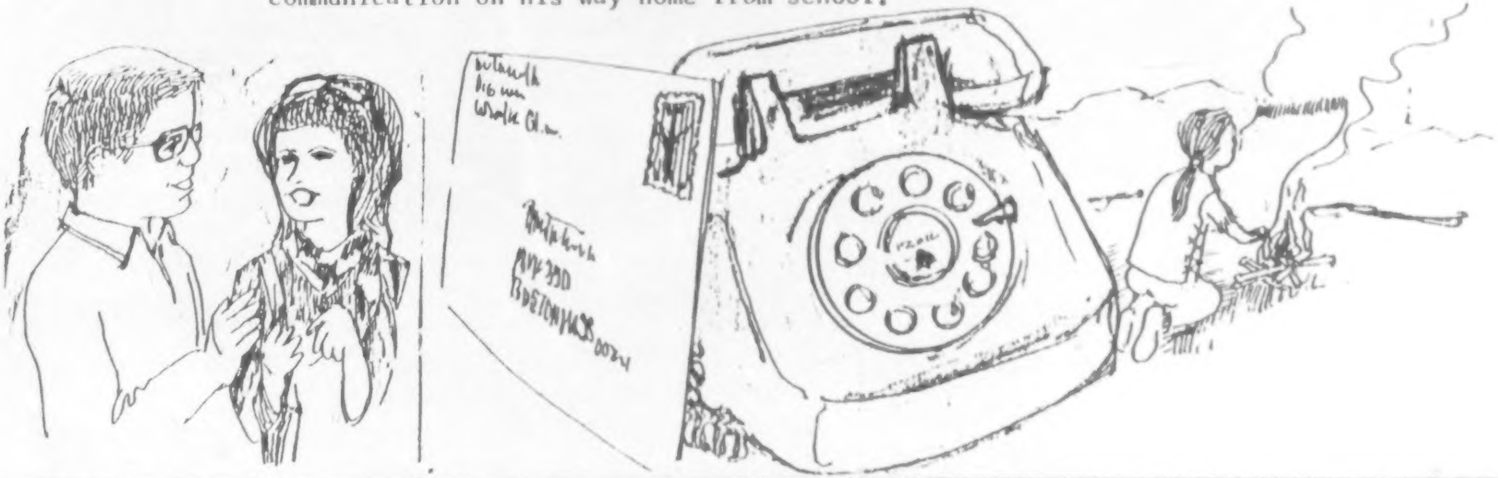
SKILL C: Is able to identify and name the following shapes: the cone, the sphere and the parallelepiped (rectangular block).

VOCABULARY:
signs
sphere
cube
parallepiped (rectangular block)
symbols

FIRST ACTIVITY FOR SKILL B

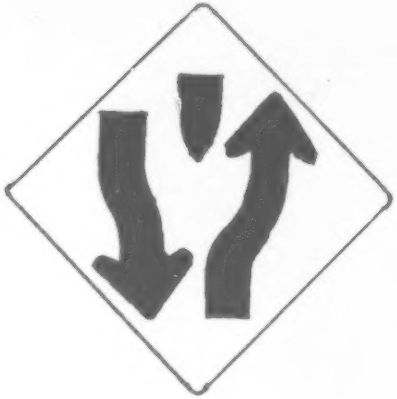
Show pictures of different means of communication, such as: two people talking, a letter, a telephone, smoke signals or a column of smoke (Indian). Discuss these with the children. Ask them about traffic signals and how they are used to communicate to the driver and the pedestrian. Red light means to stop. Green means to go. Walk is usually in a rectangular form. Rectangles are used for information signs.

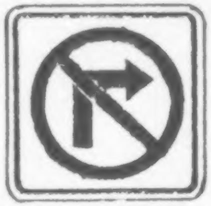
Have each child count the number of circles and rectangles used as a means of communication on his way home from school.

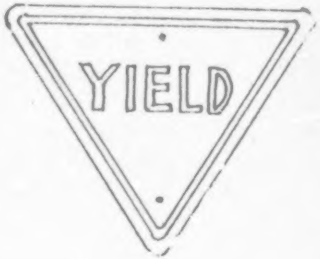


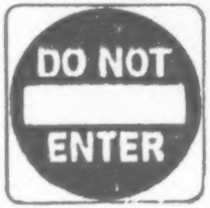
SECOND
ACTIVITY
FOR
SKILL B

Present traffic signs of different shapes to the class.





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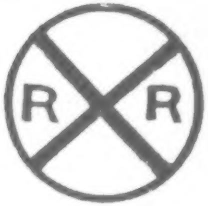
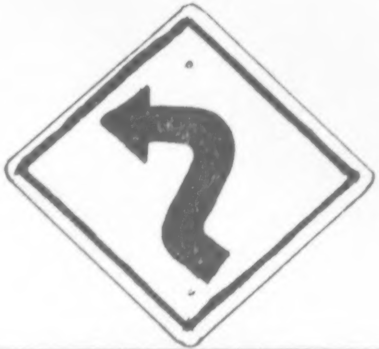
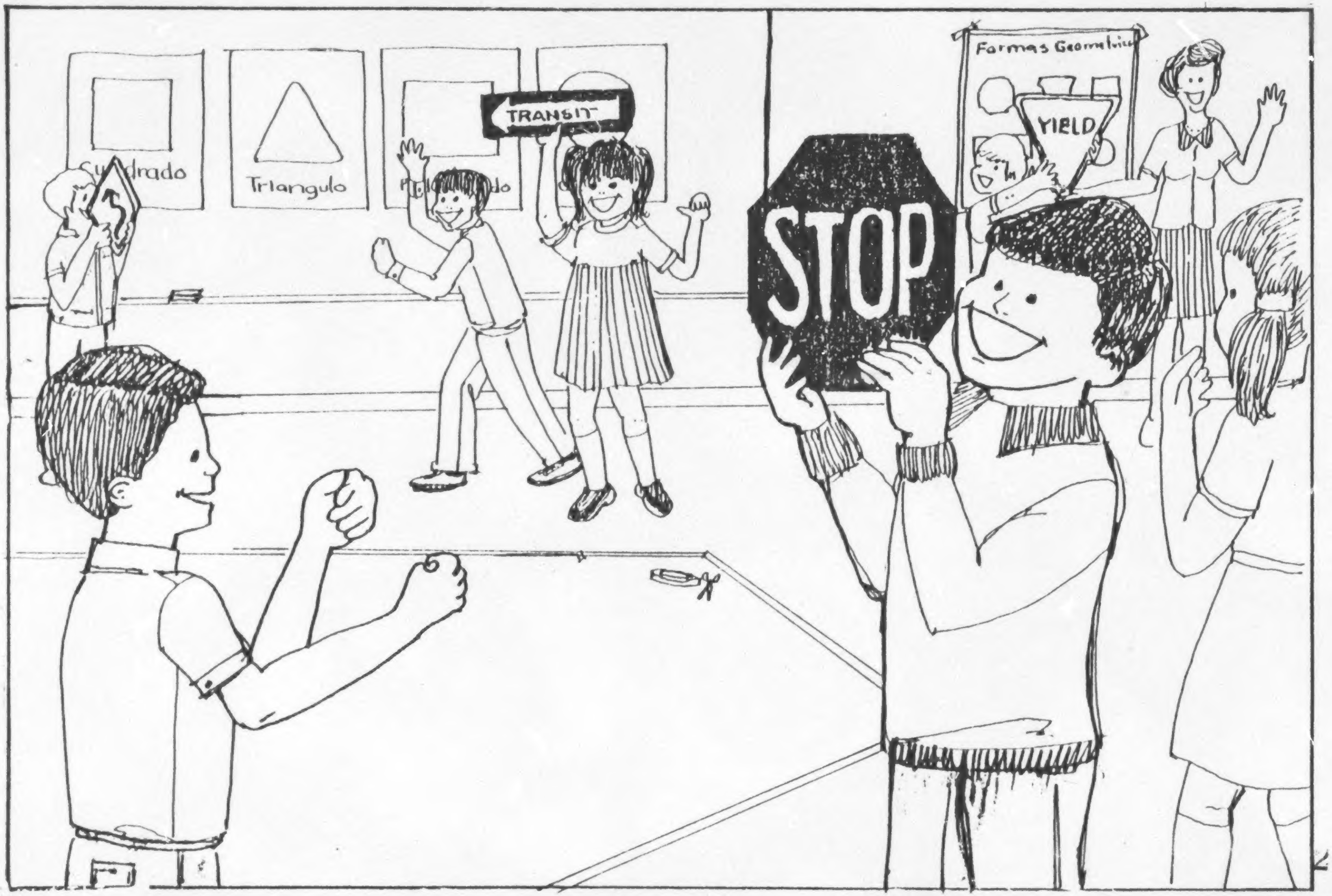




THIRD ACTIVITY FOR SKILL B

Dramatize a traffic condition by having students representing cars and various traffic signals. The students representing signs should hold up shapes with the words printed on them.


Cuadrado
Triangulo
TRANSIT
Formas Geometricas
YIELD
STOP

To initiate a discussion, ask, for example: ¿Qué figuras representan estos símbolos? ¿Qué significa o nos comunica cada símbolo? ¿Cuándo es que se usan? ¿Dónde más podemos observar esas figuras? (En objetos.) ¿Qué otros objetos ves en el salón parecidos a éstos? ¿En qué se parecen?

Ask the students to look for these signs on their way to and from school.

FIRST ACTIVITY FOR SKILL C

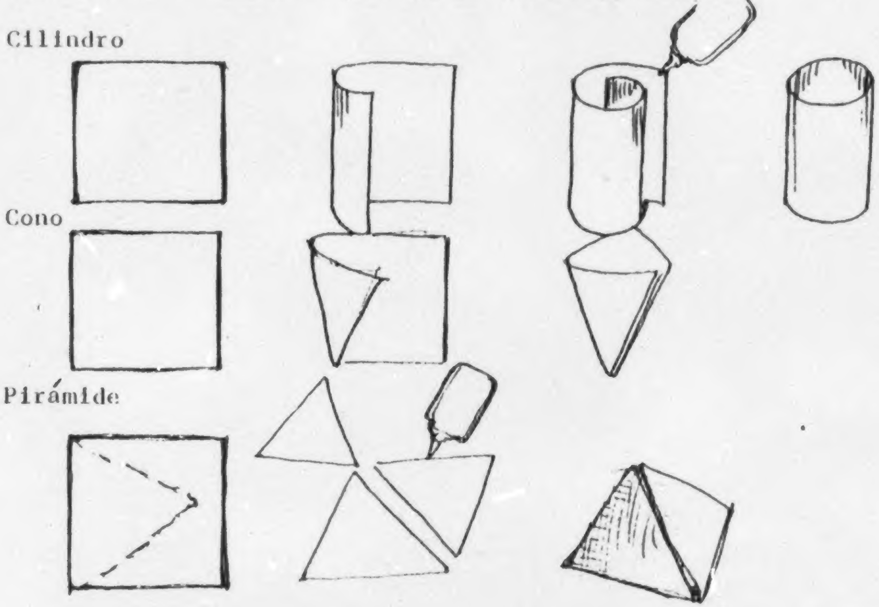
Show a figure of a circular shape, essentially flat (such as a record or a plate) and a ball. Ask questions, such as: ¿Hay alguna diferencia entre estas cosas? ¿Se parecen? Give the name and point out each one as a sphere or a circle. Each student will repeat the name verbally as he points to the figure. Ask the children to look for objects in the classroom that have a circular shape and spherical shape.

SECOND ACTIVITY FOR SKILL C

Show a square-shaped object and a cube (a block of wood or plastic). Do the same exercise as with the circular and spherical figures. Then repeat the activity with rectangles and parallelepipeds. (This is to demonstrate that the sphere corresponds to the circle, the cube, to the square and the parallelepiped to the rectangle.)

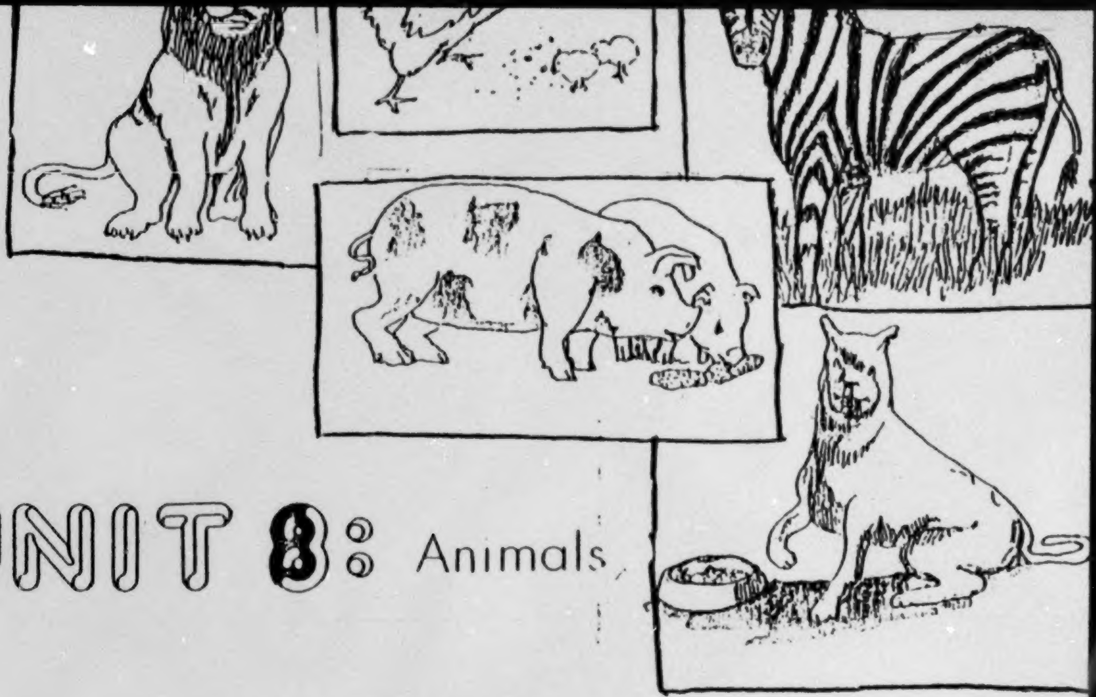
THIRD ACTIVITY FOR SKILL C

Form groups of five or six students. Distribute to each group two sheets of paper and the set of sides necessary to form a pyramid. Ask them to roll up the sheets of paper so as to form a cylinder with one of them and a cone with the other. Then have them paste the sides together to form a pyramid.



FOURTH ACTIVITY FOR SKILL C

Let the students make drawings using the shapes studied. They will explain to the class what they wish to communicate. For example,rectangles may represent buildings, triangles may represent roofs or evergreens, cylinders may represent telephone poles, and cones may represent ice cream cones or roofs of some buildings, etc.



UNIT 8: Animals

Skill A:	To describe the reaction of animals to some stimuli.
Skill B:	To group some animals according to their way of living: wild or domesticated (tame).
Skill C:	To identify characteristics of animals.
Skill D:	To identify different classes of animals.

SKILL A:	Is able to describe the reaction of animals to some stimuli.

VOCABULARY:

stimuli
respond
living
non-living
reaction

FIRST ACTIVITY FOR SKILL A

Distribute to one group of students models (or pictures) of objects, such as: insects, snails, worms, spiders, etc. To a second group give examples of the corresponding living things (if possible) such as: insects, snails, worms, spiders, etc. To other students give living plants. All will observe their objects and they will describe them, indicating some of their characteristics. Write them on the blackboard as the students mention them, so that on one side will appear the characteristics corresponding to living organisms and on the other those which describe non-living objects. Make certain that the students realize that non-living objects do not respond to stimuli the same way as living objects.

SECOND ACTIVITY FOR SKILL A

Now tell the students that they are going to form two groups. On one side of the room will be those who have living things; and on the other, those who have the non-living models of things. Let the students seek out without you. interference the group to which they belong. Then each group will indicate the reasons which determined to which group they should go. In order that the children realize whether or not they are in the correct group, have them answer questions such: ¿De dónde nace el objeto que tú tienes? ¿Cambia tu objeto en tamaño con el tiempo, o sigue igual? ¿Necesita alimento o no? ¿Se mueve por sí solo o no? ¿Se le puede dejar mucho tiempo sin atender?

THIRD ACTIVITY FOR SKILL A

Call one student to your desk and instruct him/her in a low voice, to go to the back of the room and give a blast or a whistle or ring a bell. When he/she does it, the children will react. Ask them why they did so. Ask them to mention other stimuli to which we often respond.

FOURTH ACTIVITY FOR SKILL A

The class will go outside to the school yard with instructions to observe the reactions of any living things they find when a stimulus is applied to them. For example: ¿Cómo reaccionan las hormigas cuando se les obstruye el paso? ¿Cómo reacciona el gongolí cuando lo tocan? ¿Cómo reaccionan los gusanos? They will observe the results. After approximately five minutes they will observe them again.

FIFTH ACTIVITY FOR SKILL A

Give the children the list of things that follows and have them mark with an X the ones that will react in some way if we touch them.

_____ una bombillo encendida

_____ un periquito dormido

_____ un pedazo de pan

_____ un gongolí

_____ un bebé

SKILL B: Is able to group some animals according to their way of living: wild or domesticated (tame).

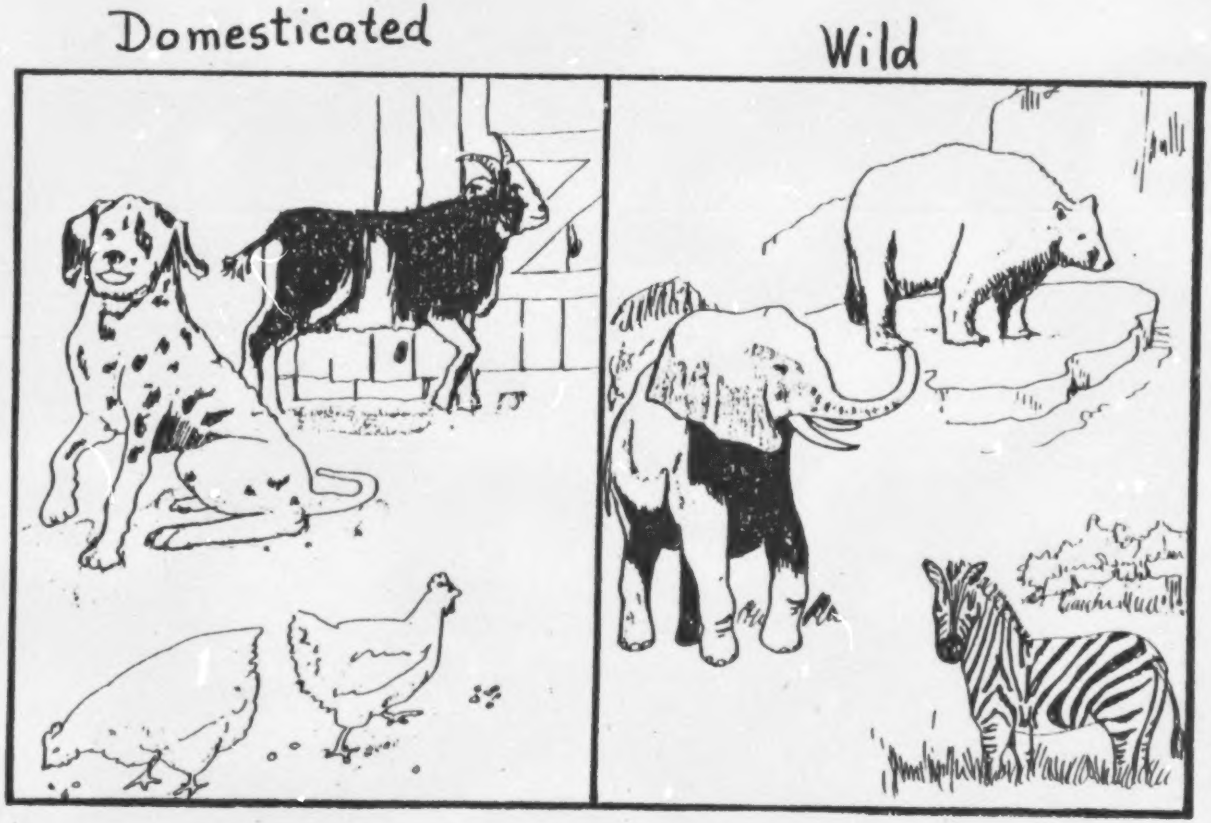
VOCABULARY:

wild
domesticated
tame
untamed

FIRST ACTIVITY FOR SKILL B

Ask the children to observe pictures of different animals. Discuss with them the kinds of animals they would like to have and whether or not it mattered if the animals were wild and untamed. Ask questions such as: ¿Cuál de estos animales te gustaría tener? ¿Podrías jugar con todos ellos? ¿Qué sabes tú de cada uno de ellos? ¿Cómo agruparías tú estos animales? Si los fuera a colocar en dos grupos; uno de los animales que viven con el hombre y otro de animales que no viven cón el hombre, ¿en qué grupo colocas a cada uno de los animales ilustrados en esta página?

FIRST ACTIVITY FOR SKILL B:



If the children cannot write yet, the teacher will have prepared a chart (such as the one above) drawn on the blackboard, posterboard, or a piece of manila paper. It should be of a size to permit the children to place on it pictures of the various animals represented.

At the end of this activity, you may lead the students to the concepts of tame and wild by means of questions, such as: ¿Cómo se les llama a los animales que viven con el hombre? (Domésticos.) ¿Y los que no pueden vivir con el hombre? (Salvajes.)

SECOND ACTIVITY FOR SKILL B

Instruct the children to draw a line from the word "wild" to the wild animals and a line from the word "tame" to the domesticated animals (use pictures).

zebra

cerdo

lobo

perro

salvaje

doméstico

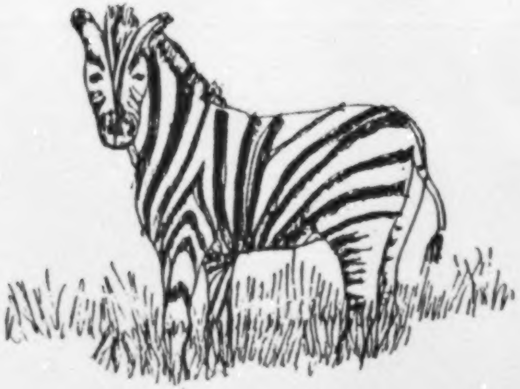
camello

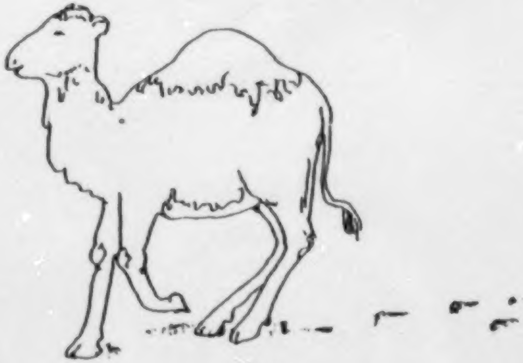
gallinas

oveja

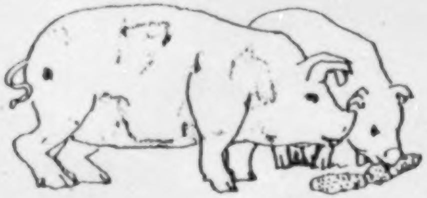
león

SECOND ACTIVITY FOR SKILL B:

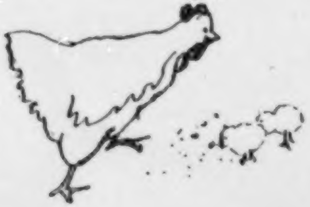


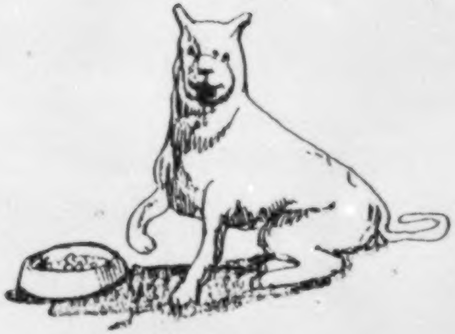


Salvaje



Doméstico





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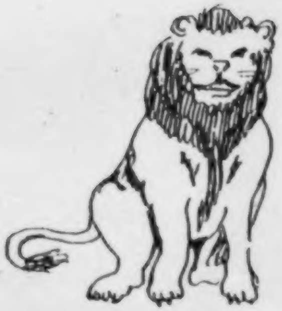

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SKILL C:	Is able to identify characteristics of animals.
SKILL D:	Is able to identify different classes of animals.

VOCABULARY:
locomotion
insects
animals

FIRST ACTIVITY FOR SKILL C

NOTE: For this lesson, it is suggested that the children bring some animals to class such as: gerbils, snails, goldfish, spiders, ants, snakes, etc.

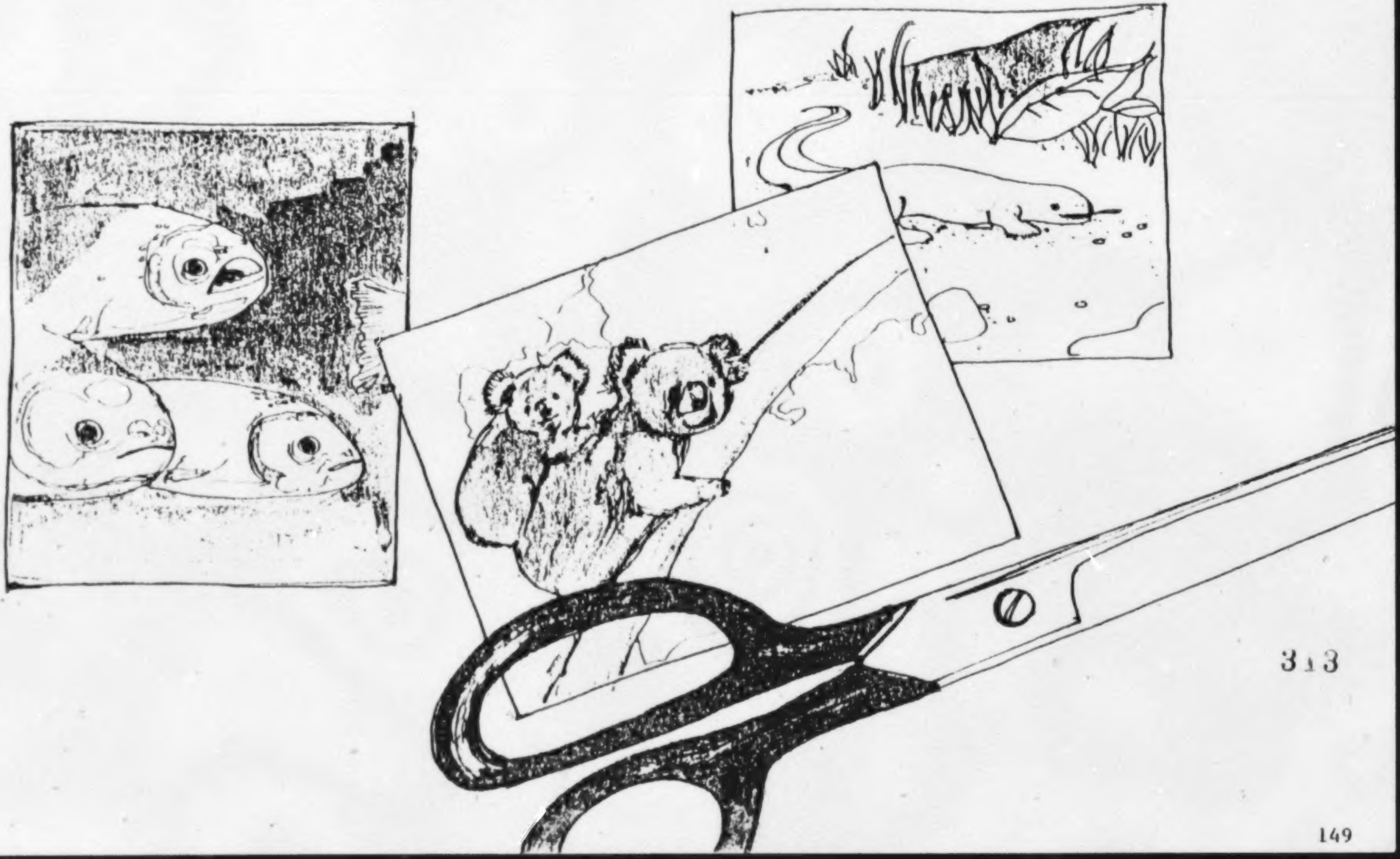
Ask a student to show the class the animal that he brought and to describe it. Ask the class to discuss the little animal with questions like: ¿Cómo es? ¿Qué hace? ¿Qué come? ¿Qué animalito te gustaría tener (o tienes) en tu casa? ¿Qué cosas hace ese animal que a ti te agradan? ¿Se mueve en alguna forma? ¿Corre? ¿Salta? ¿Vuela?

SECOND ACTIVITY FOR SKILL C

Show an insect, and ask the class to identify and describe it. ¿Es o no es un animal? ¿Qué otros animales se parecen a éste? Do the same with a snail and the rest of the animals that the children have brought to class. ¿Se parece al insecto? ¿En qué? ¿En qué se diferencia? ¿Cómo sabemos que lo que hemos observado son animales? ¿Son vivientes? ¿Por qué?

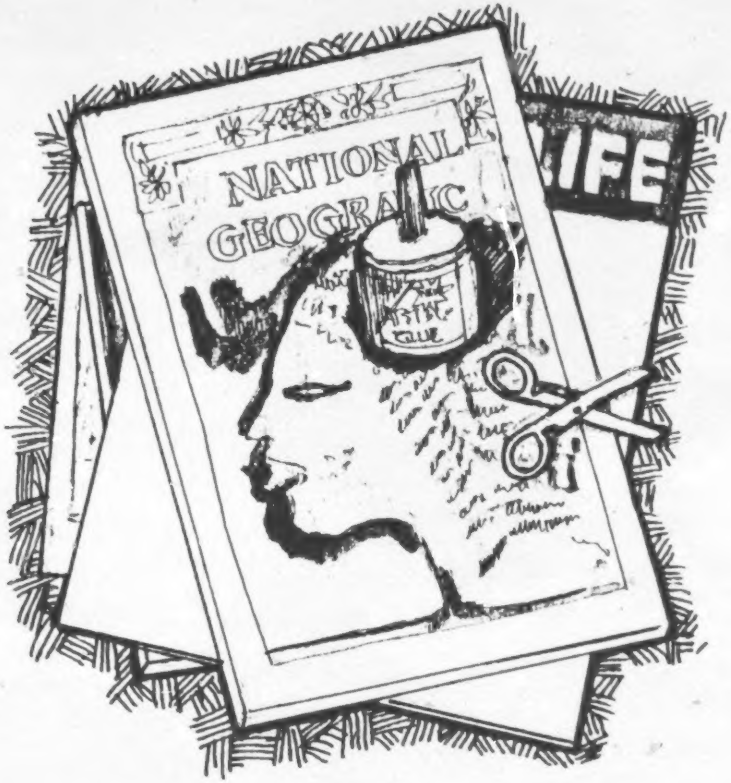
THIRD ACTIVITY FOR SKILL C

Show pictures of different kinds of animals. Ask the class to identify them and to point out the similarity in their manner of locomotion and to mention something that they use as food. In addition, ask the students to group them on the basis of those characteristics: locomotion and food.



FIRST
ACTIVITY
FOR
SKILL D

Show pictures of different kinds of animals. Ask the group to identify each one: ¿Qué es? ¿Dónde vive? ¿Se mueve? ¿Cómo? ¿Qué come?


NATIONAL
GEOGRAPHIC
LIFE
GLUE

SECOND ACTIVITY FOR SKILL D	Discuss the following: ¿Son todos los animales iguales? This is a good time to bring out the need to be more specific when making a comparison. Equal might mean equal in weight or height or tameness or texture. ¿En qué se diferencian? Ask the children to name some kinds of animals. Show again one of the animals. Observe it and describe its color, form, size and texture.
THIRD ACTIVITY FOR SKILL D	Invite the children to play, ¿Qué soy? Ask several students to imitate the manner of locomotion of different animals, such as that of a kangaroo, the rabbit, the turtle, etc. for the rest of the class to identify.
FOURTH ACTIVITY FOR SKILL D	Prepare an animal exhibition in the classroom with the help of the children. This may include real animals, pictures, photographs and models. The children can help to identify the animals by making the labels for them.
FIFTH ACTIVITY FOR SKILL D	Put some cereal (or sugar) in a glass or plastic bottle. Place some ants in the bottle. The students will observe them for several days and then describe what they have observed. They can answer questions such as: ¿Cómo describirías lo que has observado? ¿Por qué pueden vivir ahí?